

**STATE OF NEW HAMPSHIRE**  
**SITE EVALUATION COMMITTEE**

**October 22, 2018 - 1:00 p.m.**  
49 Donovan Street  
Concord, New Hampshire

**DAY 12**  
**Afternoon Session ONLY**  
**No Morning Session Held**

*{Electronically filed with SEC 10-29-18}*

**IN RE:       SEC DOCKET NO. 2015-04**  
**Application of Public**  
**Service of New Hampshire**  
**d/b/a Eversource**  
**Energy for Certificate**  
**of Site and Facility**  
**(Adjudication Hearing)**

**PRESENT FOR SUBCOMMITTEE/SITE EVALUATION COMMITTEE:**

<b>Patricia Weathersby</b> <i>(Presiding Officer)</i>	Public Member
<b>David Shulock</b>	Public Utilities Comm.
<b>Dir. Elizabeth Muzzey</b>	Div. of Hist. Resources
<b>Charles Schmidt, Admin.</b>	Dept. of Transportation
<b>Dir. Christopher Way</b>	Div. of Economic Dev.
<b>Michael Fitzgerald</b>	Dept. of Env. Services
<b>Susan Duprey</b>	Public Member

**ALSO PRESENT FOR THE SEC:**

Michael J. Iacopino, Esq.       Counsel for SEC  
*(Brennan, Lenehan, Iacopino & Hickey)*

Pamela G. Monroe, SEC Administrator

*(No Appearances Taken)*

**COURT REPORTER:   Cynthia Foster, LCR No. 14**

*{SEC 2015-04} [Afternoon Session ONLY] {10-22-18}*

**I N D E X**

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**P R O C E E D I N G S****(Hearing resumed at 1:00 p.m.)**

PRESIDING OFFICER WEATHERSBY: Good afternoon all. Welcome back to Day 12 of the Adjudicative Hearings for the Seacoast Reliability Project. Our witnesses today are Payson Whitney and Matthew Ladewig. If they could be sworn in.

(Whereupon, **Payson R. Whitney, III**, and **Matthew D. Ladewig** were duly sworn by the Court Reporter.)

**PAYSON R. WHITNEY, III, SWORN****MATTHEW D. LADEWIG, SWORN**

MR. ASLIN: Thank you, Madam Chair.

**DIRECT EXAMINATION****BY MR. ASLIN:**

Q Good afternoon, Mr. Whitney and Mr. Ladewig. If you could please each identify yourselves by stating your full name and your employer and position, please?

A (Ladewig) My name is Matthew Ladewig. I work for ESS group as a Senior Scientist.

A (Whitney) My name is Payson Whitney. My name is Payson Whitney. I work for ESS group. I'm a Vice President for the company.

1 Q Thank you. And you filed your part of testimony  
2 in this docket so I'm going to ask if you have  
3 the following pieces of testimony in front of  
4 you.

5 The first is what's been marked as Counsel  
6 for the Public Exhibit 1 which is your Joint  
7 Prefiled Direct Testimony that is filed on July  
8 31st, 2017. Do you have that?

9 A (Ladewig) Yes.

10 A (Whitney) Yes.

11 Q What's been marked as CFP Exhibit 1-A is the  
12 Technical Review Report that was attached to  
13 your original Prefiled Testimony. Do you have  
14 that as well?

15 A (Whitney) Yes.

16 A (Ladewig) Yes.

17 Q And you should also have what's been marked as  
18 Counsel for the Public Exhibit 2 which is  
19 Mr. Whitney's Supplemental Direct Testimony of  
20 July 2nd, 2018, pertaining to HDD. Do you have  
21 that, Mr. Whitney?

22 A (Whitney) I do, yes.

23 Q And finally, you should also have CFP Exhibit 3  
24 which is the Joint Prefiled Supplemental

1           Testimony dated July 20th, 2018. Do you have  
2           that?

3           A     (Whitney) Yes.

4           A     (Ladewig) Yes.

5           Q     Do you have any corrections or changes to any of  
6           those testimonies?

7           A     (Whitney) I do not.

8           A     (Ladewig) No.

9           Q     And do you adopt those testimonies as your sworn  
10          testimony today?

11          A     (Whitney) Yes.

12          A     (Ladewig) Yes.

13          Q     All right. Madam Chair, they're offered for  
14          cross?

15                   PRESIDING OFFICER WEATHERSBY: Thank you.  
16          First examiner will be Attorney Patch.

17                                   **CROSS-EXAMINATION**

18          **BY MR. PATCH:**

19          Q     Good afternoon.

20          A     (Ladewig) Hello.

21          A     (Whitney) Hello.

22          Q     My name is Doug Patch. I represent the Town of  
23          Durham and University of New Hampshire in this  
24          docket.

1 I think you know, but I guess I want to  
2 probe this a little bit. Little Bay is part of  
3 the Great Bay Estuary in New Hampshire, correct?

4 A (Whitney) Yes.

5 Q And would you agree that it's a national  
6 treasure and a valuable resource to the state?  
7 I can show you a couple of exhibits that we've  
8 introduced if you're in doubt that, you know,  
9 that indicate that, but I wasn't sure if you've  
10 looked through those exhibits before, but if  
11 necessary we can go there.

12 A (Whitney) I'm not sure that I've looked at those  
13 exhibits.

14 Q I can't hear you.

15 A (Whitney) I'm not sure that I've looked through  
16 those exhibits. I do know it's listed as an  
17 estuary of national importance.

18 Q Okay. That's pretty much what I'm saying.  
19 There are, just to note for the record, Exhibit  
20 TD/UNH 12, page 4, says that it's a national  
21 treasure and a valuable resource to the state.

22 And do you know that it's also been  
23 designated by EPA as an estuary of national  
24 significance under Section 320 of the Clean

1 Water Act?

2 A (Whitney) Yes.

3 A (Ladewig) Yes.

4 Q And are you familiar with the fact that, well,  
5 first of all, are you familiar with  
6 eutrophication?

7 A (Whitney) Somewhat. I am somewhat familiar with  
8 the concept, yes.

9 A (Ladewig) Yes.

10 Q And again, I can show you an exhibit, but are  
11 you familiar with the fact that the Great Bay  
12 Estuary has all the classic signs of  
13 eutrophication?

14 A (Whitney) Somewhat, yes. I'm somewhat familiar  
15 with that fact.

16 Q I think it would help if you could get a little  
17 closer to the microphone because I'm having a  
18 little trouble hearing you and probably others  
19 are, too.

20 A (Whitney) Is that better?

21 Q Better. Thanks.

22 And is it fair to say that EPA and DES are  
23 both attempting to reduce nitrogen loading in  
24 Great Bay and Little Bay?

1 A (Whitney) That's my understanding. Yes.

2 Q Would you agree that removing the existing cable  
3 and digging and excavating three trenches in  
4 Little Bay through a combination of an  
5 excavator, diver or hand jetting and jet plowing  
6 as proposed for this Project will degrade the  
7 water quality in Little Bay?

8 A (Whitney) I would agree that those activities  
9 would cause temporary and localized impacts in  
10 terms of sediment disturbance. As to whether  
11 they degrade, I think that's a matter of degree.

12 Q So --

13 A (Whitney) I think that's part of what the, what  
14 is in the record is trying to get to that  
15 question.

16 Q Is it your position that those impacts are just  
17 temporary?

18 A (Whitney) Yes.

19 Q Now, I think you're familiar with the August 31  
20 letter from DES to this Committee that's been  
21 marked as Applicant's Exhibit 183. Is that fair  
22 to say?

23 A (Whitney) August 31 of this year?

24 Q Yes.

1 A (Whitney) Yes.

2 Q Were you aware that Eversource and DES were  
3 having discussions about changing the Final  
4 Decision that was issued in February of 2018  
5 that is Exhibit 166? Were you aware of those  
6 discussions?

7 A (Whitney) Aware of them as part of this letter,  
8 as a result of this letter? Or before the  
9 letter was --

10 Q Prior to that?

11 A (Whitney) Before that, no.

12 Q And I'm looking at CFP 3, page 6, and I believe  
13 that is your July of 2018 testimony.

14 A (Whitney) Page 6, you said?

15 Q Yes.

16 A (Whitney) Yes.

17 Q And you have a number of comments there and they  
18 go over on to the next page, I think, about the  
19 February DES permit conditions. And I guess I'd  
20 like you to, if you could, kind of walk through  
21 each of those conditions and tell us where they  
22 stand today given the changes from the February  
23 28th permit conditions and whether you had  
24 recommendations, I guess, about changes to

1 those, whether they have been satisfied or not.  
2 Would you be willing to do that?

3 A (Whitney) Sure.

4 Q Starting with Wetlands Condition 20?

5 A (Whitney) Sure. So for Wetlands Conditions 20,  
6 we suggested adding an exception for floating  
7 equipment. This condition pertains to refueling  
8 of equipment. And our suggestion was adding an  
9 exception for floating equipment because that  
10 cannot physically be taken away from a water  
11 body. DES concurred in the August 31 letter  
12 with that occurrence, and they did change that  
13 recommended condition in that letter.

14 Condition 45. The condition listed a  
15 series of analytes for laboratory analysis.  
16 PFOA and PFOS were not included. And then the  
17 Applicant was requested to provide data for  
18 these analytes which was provided. And then our  
19 comment was if the water quality concerns remain  
20 as part of the proceeding with regard to those  
21 two constituents that we would recommended those  
22 analytes be included in the water quality  
23 monitoring when that is done.

24 I don't recall that that got addressed in

1 the letter, the August 31 letter. I'd have to  
2 go back and look at that. I didn't note that.

3 Wetland 53, condition about weather and we  
4 just noted it appeared to be quite vague as the  
5 conditions for jet plowing can occur, and we  
6 just thought that more specificity was needed  
7 just to be able to set the ground rules for DES  
8 and for the Applicant in that one.

9 54, was with regard to wind, DES had set a  
10 15 mile an hour wind speed as a threshold for  
11 determining whether cable installation could  
12 start, and just from experience, not only  
13 professional but also personal experience of  
14 being around the water, 15 mile an hour breeze,  
15 even on a good day, you can have a very clear  
16 day and you can have a 15 mile an hour breeze  
17 and that just, it seemed low. We cited the  
18 Beaufort scale which is what mariners use to  
19 describe wind and sea conditions, and just  
20 recommend that maybe a 20 mile an hour wind  
21 speed was more appropriate.

22 I do not believe that DES changed that  
23 condition in their August 31st letter, but I'd  
24 have to go back and double-check.

1           Condition 55 was regarding cable burial  
2 depths, and we suggested adding a notation that  
3 or to the cable burial depths that are specified  
4 by the Army Corps. In our experience, the Army  
5 Corps is typically the agency that really  
6 governs and drives burial depth in cables based  
7 on their rules on monitoring the water ways.

8           56 was about --

9       Q     Could I just stop you on that particular one?

10      A     (Whitney) Absolutely.

11      Q     I mean, I thought the burial depth was governed  
12 by codes, but are you saying if the Army Corps  
13 wants it to be deeper? Is that what you're  
14 saying.

15      A     (Whitney) The Army Corps can request it to be  
16 deeper, yes.

17      Q     Deeper but not shallower.

18      A     (Whitney) They can put the, the Army Corps has,  
19 based on the region, has different burial depth  
20 standards that they use in different parts of  
21 the country.

22      Q     Do those sometimes run contrary to national  
23 codes then? Because we were led to believe  
24 there was a national code that dictated the

1 burial depth.

2 A (Whitney) My understanding is there is a  
3 national electric code or whatever, I don't know  
4 what the exact terminology is for that document,  
5 but that is one document that is there. But the  
6 Army Corps, in terms of permits, the Army Corps  
7 in my experience has been largely the agency  
8 that sets the burial depths of cables.

9 Q Sorry. Go ahead.

10 A (Whitney) 56, DES was requiring DES approval of  
11 a silt curtain removal 90 days before it was  
12 actually physically removed, and it just, in our  
13 review of the record it didn't seem to align  
14 with what the schedule for construction was.

15 And one of the things we also noted was  
16 that the long-term presence of the silt curtains  
17 in the near-shore portion while waiting for DES  
18 to approve removal may actually exacerbate some  
19 of the impacts to the bottom because if it takes  
20 days for DES to get back, the tide's going up,  
21 the tide's going down, the silt curtains are  
22 moving. If the work was done, it could have  
23 just been removed. So that was just a point of  
24 clarification there.

1           Shoreland condition, again, there were a  
2           lot, they were things that referenced old or  
3           outdated dates of plans that were in the  
4           Application record, and we just suggested that  
5           they be updated for the permit to reflect  
6           whatever the most recent date was for plans.

7       Q     Okay. Thank you. I appreciate you going  
8           through those.

9           Now, as I understand it, as a result of  
10          further discussions that Eversource had with DES  
11          they've now reached agreement that the jet plow  
12          trial run will be done within the 21 days prior  
13          to the cable installation. Is that your  
14          understanding?

15       A     (Whitney) That is my understanding as well, yes.

16       Q     And if the Project is approved and the SEC  
17          agrees with this particular condition, that  
18          Eversource will be required to provide a DES jet  
19          plow trial summary report; is that the case?  
20          Will they be required to produce that?

21       A     (Whitney) I believe that's what it says. Yes.

22       Q     What's your understanding of what will be in  
23          that report?

24       A     (Whitney) I don't know that I have an

1           understanding of what will be in that report. I  
2           don't think it's specified in the DES August  
3           letter.

4       Q     I mean, given your experience, what would you  
5           expect would be in that kind of report?

6       A     (Whitney) I would expect a description of where  
7           the plow trial was done. The conditions at the  
8           time that it was done. Any, a description of  
9           the jetting pressures, the rates of advance from  
10          the installation vessel. And then I would also  
11          expect if the Applicant is also using that time  
12          to be doing monitoring and testing the  
13          monitoring requirements, the results of the  
14          monitoring, whether there was a TSS plume  
15          observed, any concentrations that were observed  
16          as part of that monitoring. So lab results or  
17          if it's done with a realtime instrumentation to  
18          identify the plume, those types of -- and then  
19          any changes that may have been made. If they  
20          were, if they had realtime data saying that the  
21          plume was exceeding a potential threshold, did  
22          the monitoring team and the construction team,  
23          the vessel team, did they adjust jetting  
24          pressures or rates of advancement to kind of

1 dial in as to where they need to be for  
2 installing the cable.

3 Q To the best of your knowledge though, what you  
4 just described isn't put in writing anywhere in  
5 the record that you know of?

6 A (Whitney) Not that I'm aware of. No.

7 Q What's your understanding of whether DES would  
8 have the authority based on the results of the  
9 trial run to say that jet plowing should not  
10 proceed?

11 A (Whitney) I have no knowledge of that.

12 Q You have no understanding of that.

13 A (Whitney) No.

14 Q And do you have any knowledge of what standard  
15 they would use to make a determination as to  
16 whether or not the jet plow should proceed? Do  
17 you have any understanding of that?

18 A (Whitney) I believe the record is built off, the  
19 thresholds are built off of a mixing zone being  
20 established by DES.

21 Q Is it your opinion that Eversource and DES will  
22 be able to obtain, review and analyze all of the  
23 trial run data, compare it to the predicted  
24 model results, make any meaningful changes to

1 the cable run procedure, if necessary, and  
2 prepare all of this in a report to DES in just 7  
3 days?

4 A (Whitney) I don't really have an opinion one way  
5 or the other. It's up to them whether they  
6 could do that or not.

7 Q What's your understanding of what Eversource has  
8 said about jet plow runs across Little Bay and  
9 how long they will take?

10 A (Whitney) It was specified in a number of  
11 documents. I don't remember the exact duration  
12 off the top of my head. I'd have to go back and  
13 look.

14 Q Do you think it's fair to say there's quite a  
15 bit of variation in the estimated times?

16 A (Whitney) I'd have to go back and look.

17 Q So you don't have any recollection?

18 A (Whitney) I don't. No. Not right now.

19 Q And wouldn't the impact be very different  
20 depending on how fast the jet plow moves across  
21 the bay and when it is done in relation to the  
22 tides? Is that fair to say?

23 A (Whitney) I would say it could be different. I  
24 don't know that I would say very different. It

1 really depends upon, like you say, about the  
2 timing and the tides whether it's, how  
3 different, the extent of the difference.

4 Q CFP 3, your July of this summer testimony, page  
5 4, and it's line 21. You talk about Water  
6 Quality Monitoring During Construction.

7 If I read this correctly, it seems like you  
8 had some issues with sentry station  
9 measurements. Is that fair to say?

10 A (Whitney) What we note is that the Applicant has  
11 added the sentry station measurements to the  
12 overall plan in their September monitoring  
13 document. Those were not part of the original  
14 monitoring plan. And one of the the things that  
15 we noted was that the sentry stations were at  
16 fixed points. They were going to, you know,  
17 they were going to pick a coordinate prior to  
18 doing the installation, and one suggestion we  
19 had was provide for some flexibility to be able  
20 to move if the plume isn't where the preselected  
21 locations thought they might be. That was the  
22 point of this comment.

23 Q So had the issues that you raised here in your  
24 testimony been addressed?

1 A (Whitney) I'd have to go back and review the  
2 details of the August 31 letter to see if they  
3 actually addressed it or not.

4 Q So you haven't checked on that?

5 A (Whitney) I just don't remember that they did or  
6 not. There's a lot of conditions in here that,  
7 some were accepted, some were not in the August  
8 31st letter.

9 Q Electronic, let's see, in the same testimony,  
10 electronic page 6, you talk about the, begins on  
11 line 9 there, says the plan states the mobile  
12 monitoring will continue for two hours after jet  
13 plowing has been completed or longer if  
14 indicated by turbidity results. We recommend  
15 that more specificity be provided to the  
16 statement "if indicated by turbidity results."  
17 Has this been addressed?

18 A (Whitney) I don't know that it has.

19 Q So you haven't checked the August 31 letter?

20 A (Whitney) I reviewed it. I don't remember that  
21 piece being addressed.

22 Q So if it hasn't been, that's still a concern of  
23 yours?

24 A (Whitney) I think the concern is that in it's

1 kind of a vague statement and that specificity  
2 needs to be included in that. Some level of  
3 specificity. Just to protect the state and to  
4 protect the Applicant. So it's always easier  
5 when you're doing things, the people that are  
6 doing things in the field are not the people  
7 that are sitting here today, and so in my  
8 experience in writing conditions and being held  
9 to conditions on permits and also approving  
10 conditions -- I sit on my Planning Board in my  
11 town -- keeping them as specific as you can  
12 helps both parties.

13 Q So it's important to get those conditions in  
14 writing ahead of time?

15 A (Whitney) Yes. But those conditions could even  
16 be, there has to be a plan that says X.

17 Q In other words, the devil is in the details.

18 A (Whitney) Somewhat, yes.

19 Q Page 10 of your HDD testimony, CFP 2, and I'm  
20 looking at lines 26 to 28. You were discussing  
21 the timing of the jet plow trial run and here  
22 you said there is the potential that a jet plow  
23 trial performed this far in advance of the cable  
24 installation -- that's when it was going to be

1 90 days in advance, I think -- would not have  
2 the exact same equipment or personnel involved  
3 which may not result in an accurate simulation  
4 of the cable installation.

5 So when I read that it occurred to me that  
6 you were suggesting that the personnel who were  
7 involved in the jet plow could have a  
8 significant impact on how it comes out. Is that  
9 what you were saying or did I misinterpret that?

10 A (Whitney) I think what I was saying was that by  
11 doing the jet plow trial before, a short time  
12 before installation, the crews are in place, the  
13 equipment is in place, the personnel that  
14 learned from that jet the plow trial are also  
15 there to apply that learning to the installation  
16 a few weeks later.

17 If you don't have, if I was running the jet  
18 plow trial in the spring and then Matt happened  
19 to be running the install, I may not be able to  
20 translate everything that I learned over to  
21 Matt. So that was my point is just, if you  
22 have, you increase your odds of success by  
23 having the same people there for the trial as we  
24 do for the installation.

1 Q And regardless of how much experience they might  
2 have in doing jet plows?

3 A (Whitney) Correct. There's little things that  
4 we all as we do what we do we all pick up on and  
5 sometimes can't translate to others.

6 Q In CFP 3, on page 3, you cite the use of either  
7 a hoe ram or rotary cutter as being a  
8 possibility that could be used to excavate the  
9 cable trenches through rock at landfalls, and  
10 you said that it may be possible to reuse the  
11 excavated rock material as cable protection  
12 material at the surface or to place on top of  
13 the concrete mattresses. Is that correct?

14 A (Whitney) Can you point to the line number? I'm  
15 not seeing that what you're saying.

16 Q Line 12. It's electronic page 4, but I believe  
17 it's page 3.

18 A (Whitney) I'm not sure we're looking at the same  
19 thing. I was on number 2. That's why. Okay.  
20 Would you repeat your question, Mr. Patch?

21 Q Well, number 1, I wanted to point that out to  
22 you, and number 2, I guess I wanted to  
23 understand exactly what it was you were saying  
24 there. Is it your understanding that this is

1           what they're going to do or are you recommending  
2           that they do more of this?

3           A     (Whitney) What I stated was on page 2, the  
4           document described the use of. So page 2 of  
5           that document described the use of a hoe ram or  
6           rotary cutter is what I was referring to, but it  
7           did not describe the estimated volume of rock  
8           material to be removed or how the material was  
9           to be disposed or reused. So I was referring to  
10          the September 15th Little Bay impact assessment.

11          Q     Right. And so is this a recommendation you have  
12          for them then? Have you found anything since  
13          then that has changed your mind about that?

14          A     (Whitney) No. I think what we said is that we  
15          described, just like I said, the report  
16          describes the use of that, but it did not  
17          describe how the rock was going to be handled in  
18          the end. We did say that it could be possible  
19          or may be possible is the word I used to reuse  
20          the excavated rock material for cable protection  
21          instead of a mattress or something similar.

22                 I believe that somewhere in the record  
23          subsequent to this, may have been a Technical  
24          Session or may have been in the early testimony

1 of the Construction Panel, that that was  
2 discussed that they could not reuse the rock in  
3 this case, but I don't remember the reason why.  
4 I just, I have that recollection it's somewhere  
5 in the record.

6 Q So it's your understanding at this point that  
7 they're not planning to do this?

8 A (Whitney) That's my understanding that they're  
9 talking about using mattresses, yes.

10 Q I mean, you're familiar with the extent of the  
11 concrete mattresses that they're now estimating,  
12 how that's changed from the original estimate.  
13 Is that fair?

14 A (Whitney) I have the construction plans here  
15 with me. I believe that's the -- this record  
16 has changed a lot over time so it's kind of hard  
17 to keep track of what the most current is, but  
18 the plans that I have in front of me or the  
19 power engineer plans that have a date of, say  
20 revised 7/18/18, revision number 13. So those  
21 are the two, they're two sheets that show the  
22 extent of the concrete mattresses.

23 Q Do they have a square footage on there?

24 A (Whitney) Let me see. No. They don't. Not on

1           this plan.

2           Q     Is it your understanding that the estimate now  
3           is 8,681 square feet of concrete mattresses?

4           A     (Whitney) I'd have to go back and look to get  
5           the exact number.

6           Q     I mean, I think it's pretty clear in the record,  
7           but I'll just cite to the fact that it's on  
8           Exhibit 133, page 16, and you haven't had the  
9           benefit of being here as many days as some of  
10          the rest of us.

11          A     (Whitney) That's correct.    Yes.

12          Q     But it's definitely in the record.

13          A     (Whitney) Okay.

14          Q     So would you accept that's the current estimate?

15          A     (Whitney) If it's in the record, I'll accept it,  
16          yes.

17          Q     Thank you.    And that extent of square footage of  
18          concrete mattresses could have a pretty  
19          significant impact on organisms that live in the  
20          bay, couldn't it?

21          A     (Whitney) Temporarily.    Yes.

22          Q     You said it might be possible to use split pipes  
23          in intertidal areas to limit visual impacts from  
24          concrete mattresses, and that was on page 3 to 4

1 of CFP 3. I think it's at the bottom of the  
2 page we had up before. Is that still your  
3 opinion?

4 A (Whitney) I believe that in terms of what you  
5 just asked me about in terms of reducing the  
6 visual, I believe that yes, they would. My  
7 understanding is that the Applicant's  
8 Construction Panel testified that the split  
9 pipes are not an option for this cable because  
10 they affect cable ampacity, and I have no reason  
11 to question that. I'm not an electrical  
12 engineer.

13 Q All right. So that's not your area of  
14 expertise.

15 A (Whitney) No.

16 Q Independent of that, you still think split pipes  
17 could help to reduce that impact.

18 A (Whitney) Compared to a mattress?

19 Q Yes.

20 A (Whitney) Yes.

21 Q On page 6 of your Original Testimony, this is  
22 CFP 1.

23 A Page 6, you said?

24 Q Yes. You talked about water quality monitoring

1 and said that the program should include  
2 monitoring of chemical constituents in the water  
3 column in samples collected 500 feet up-current  
4 and down-current of the operating jet plow?  
5 Correct?

6 A (Whitney) That's what it says, yes.

7 Q Is it your understanding that that's in the  
8 current permit conditions?

9 A (Whitney) My understanding is that the, there is  
10 sampling of chemical constituents in the water  
11 as part of that plan. I don't believe the  
12 500-foot distance was used.

13 Q Do you think that's important?

14 A (Whitney) No.

15 Q No?

16 A (Whitney) I think it's -- state standards vary.  
17 Certain states want to set distance. Others  
18 have more of a mixing zone approach.

19 Q You also recommended using recent sampling of  
20 benthic infaunal community monitoring as a  
21 baseline instead of 2014 data. I think this is  
22 on the next page. Do you still feel that way?

23 A (Ladewig) Yes.

24 Q Is that something that is in the current permit

1 conditions?

2 A (Ladewig) To the best of my understanding, yes.

3 Q And CFP 3, electronic page 6, you also talked  
4 there about the benthic infaunal community. Do  
5 you see that?

6 A (Ladewig) Yes, I do.

7 Q And as your recent testimony, July of this year,  
8 in CFP 3, in terms of the benthic infaunal  
9 community monitoring, are you satisfied that the  
10 current permit conditions adequately address  
11 that?

12 A (Ladewig) I believe that there is the  
13 opportunity to collect the samples the way that  
14 we've recommended here.

15 Q Could you say that again? I'm sorry. I didn't  
16 quite understand that.

17 A (Ladewig) I believe there is the opportunity to  
18 collect the samples the way we have recommended  
19 here.

20 Q Opportunity, but is that a requirement under  
21 current permit conditions?

22 A (Ladewig) I'm not familiar with whether it is or  
23 not.

24 Q But if it isn't, you think it should be?

1 A (Ladewig) I think it would be wise to complete  
2 the assessment at the time indicated here.

3 Q With regard to HDD in your July Supplemental  
4 Testimony, CFP Exhibit 2, and I'm looking at  
5 page 4, line 17 to 20. And here you had said  
6 that ESS has experience with submarine cable  
7 projects that have used both HDD and standard  
8 excavation hand-jetting techniques at cable  
9 landfalls including projects where HDD was used  
10 at one landfall and the standard excavation/hand  
11 jetting techniques were used at the other  
12 landfall.

13 Did I state that correctly?

14 A (Whitney) That's correct. Yes.

15 Q Did you mean when you said that, I'm sorry, when  
16 you said that "ESS has experienced," does that  
17 mean you personally, Mr. Whitney, or do you mean  
18 just your company?

19 A (Whitney) The company and myself personally. So  
20 both.

21 Q How much experience do you have with the use of  
22 HDD on landfalls?

23 A (Whitney) It's been used or contemplated on a  
24 number of projects that I've been involved, some

1 of which may have never got built.

2 Q And did any of those Projects that involved --  
3 did any of those Projects you've been involved  
4 in also occur in an estuary of national  
5 significance?

6 A (Whitney) Yes.

7 Q Which one is that?

8 A (Whitney) I have project experience in the  
9 Hudson River and Upper New York Bay which is an  
10 estuary of national significance. A project  
11 that was never built but was permitted in or  
12 almost permitted in Chesapeake Bay, got a  
13 Project that was just permitted in the Delaware  
14 River, although that one is not going to use HDD  
15 although it was contemplated in the beginning.

16 Q Are you familiar with, it's been described  
17 earlier in this proceeding, I'm not sure if it  
18 was when you were here, but with the landfall  
19 for the cable that was going from Cape Cod over  
20 to Martha's Vineyard?

21 A (Whitney) Which cable?

22 Q I don't recall exactly which, but I remember  
23 that it was a discussion about --

24 A (Whitney) Oh, to the Vineyard, you said?

1 Q To Martha's Vineyard.

2 A (Whitney) Was it the most recent? The NSTAR --

3 Q Yes.

4 A (Whitney) I am familiar with that cable. Yes.

5 Q Do you know why they did landfall on the Cape  
6 Cod side? Would it surprise you to know that it  
7 was to avoid eelgrass?

8 A (Whitney) That would not surprise me. No.

9 Q In Attachment ESS 1 in CFP 1, I think it's  
10 electronic page 10.

11 A (Whitney) CFP 1 is our report, right? From July  
12 of 2017.

13 Q Yes. I'm on the first page of that, and it  
14 talks about you having more than 20 years'  
15 experience as a Project Manager and that you are  
16 among the foremost submarine cable system  
17 planners in the industry; is that correct?

18 A (Whitney) Hold on. I don't believe I have that,  
19 the attachment portion of that report. But I  
20 have it right in front of me here so yes.  
21 That's correct. That is my resume.

22 Q We received an exhibit this morning, Applicant's  
23 Exhibit 210, and it's apparently a document  
24 prepared by the ESS Group, and I think it has

1 your name on it, if we can scroll down a bit.

2 On the cover is a picture of what I would  
3 guess is the kind of equipment that is typically  
4 used to embed submarine cables; is that correct?

5 A (Whitney) That's part of it. Yes.

6 Q So is that the kind of equipment that will be  
7 used in Little Bay?

8 A (Whitney) You have to ask the installer, but I  
9 do believe they talked about using a barge  
10 setup.

11 Q And that's what that is?

12 A (Whitney) That's what this is. What you're  
13 seeing in the picture is two barges that are  
14 berthed along, tied to each other basically.  
15 The barge in the foreground, you can see the  
16 orange structures near the bow on the left side  
17 and the black pipes going into the water, those  
18 are the intake pumps that feed the jet plow.  
19 The shipping containers or Conex boxes that are  
20 on board carry equipment or offices. The barge  
21 behind that has the big gray structure on it,  
22 the structure that looks like the neck of a  
23 goose, it is called the goose neck. That brings  
24 the cable up so it maintains a correct bending

1 radius as it's pulled out of the turnstile which  
2 is in the middle of that cable. The barge,  
3 rather. So below the surface is, the jet plow  
4 is underwater installing the cable.

5 Q Now, the other two estuaries that you described,  
6 I think only one of them actually became a  
7 project. Do you know what the depth was in the  
8 water there?

9 A (Whitney) In the Hudson River or Upper New York  
10 Bay Project, so we have two Projects there that  
11 have been installed. In the Hudson River the  
12 water depth ranges from about, forgetting like  
13 the very near-shore portions, 20 to 60 feet. On  
14 the Bayonne Energy Center Project which is what  
15 is pictured here the water depths were actually  
16 fairly similar. They were around 20 to 60 feet  
17 deep.

18 Q Tidal flats?

19 A (Whitney) Not in either of those, no.

20 Q Page 8 of this same document says that ESS is an  
21 industry leader in providing planning, routing,  
22 engineering, permitting and environmental  
23 monitoring for submarine cables, correct?

24 A (Whitney) That's what it says, yes.

1 Q Now, of the projects that you've worked on and  
2 the descriptions that I've read from the ESS  
3 materials, I don't see any that specifically  
4 involve doing an independent and neutral  
5 analysis of whether putting submarine cable in a  
6 particular location was a good idea. Are there  
7 any where you've done the kind of thing that  
8 you're doing here specifically before?

9 A (Whitney) Yes. We did an independent review on  
10 behalf of the Riverkeeper in the Hudson River  
11 for the Champlain Hudson Power Express Project  
12 under Article 7 which is a similar -- in New  
13 York State, it's the same process that you all  
14 have here in New Hampshire.

15 Q So did that involve monitoring later on or did  
16 it involve testimony filed with some body like  
17 this body?

18 A (Whitney) Our report was entered as part of the  
19 Riverkeeper's testimony. They were an  
20 Intervenor on the project.

21 Q But you didn't actually testify and offer an  
22 opinion?

23 A (Whitney) We did not have to testify under that.  
24 Correct.

1 Q Have you ever made a finding that doing jet  
2 plowing or HDD was a bad idea when there were  
3 available alternatives?

4 A (Whitney) I believe that as part of project  
5 teams we have looked at HDD at landfalls and  
6 determined that it will not work in that  
7 location. For a variety of reasons.

8 Q Can you be more specific?

9 A (Whitney) The most recent one that we looked at  
10 with the project team, the engineers determined  
11 that there was not enough physical land area to  
12 set up the HDD rigs for the number of bores that  
13 would need to be done to complete that Project.  
14 So that project, while it was originally  
15 conceived as doing HDD at that landfall, they  
16 decided to a shore landing, very similar to what  
17 is contemplated here where the plow will be  
18 brought as close as it could be to shore, and  
19 then divers would be used as well as some  
20 excavation at the shoreline to install the  
21 cable.

22 We also made that determination on a  
23 Project in the Delaware River where we thought  
24 directional drilling would be the way to go for

1 the landfall, and for a variety of reasons it  
2 was determined that they would do an excavation  
3 at the shorefall.

4 Q So the choices there were between jet plowing  
5 and HDD. It wasn't whether or not to do a  
6 project?

7 A (Whitney) Correct.

8 Q Have you ever been involved with jet plowing  
9 where oyster farms were involved?

10 A (Whitney) By oyster farms, you're referring to  
11 lease beds?

12 Q Yes.

13 A (Whitney) Natural lease beds or aquaculture?

14 Q Aquaculture.

15 A (Whitney) With aquaculture, no. With natural  
16 lease beds, yes.

17 Q I thought during the Tech Session that you had  
18 indicated there was a project I think down in  
19 Connecticut that you were involved in?

20 A (Whitney) Yes. Those are natural lease beds,  
21 yeah. They're natural beds.

22 Q And did they actually do jet plowing there?

23 A (Whitney) Yes, they did.

24 Q And how close to the oyster farms?

1 A (Whitney) In some cases they went through the  
2 lease beds.

3 Q Right through.

4 A (Whitney) Yes.

5 Q And did they do testing before and after to  
6 determine impacts on the oysters?

7 A (Whitney) I don't recall if they did that or  
8 not.

9 Q Do you know who owned those oyster beds?

10 A (Whitney) The State of Connecticut owned them.

11 Q The State of Connecticut owned them.

12 A (Whitney) Yes.

13 Q It wasn't the company that was doing --

14 A (Whitney) The State of Connecticut owned the  
15 bottom land, and they were leased to the  
16 operators.

17 Q The operators. What operators?

18 A (Whitney) Whoever the oyster company was leased  
19 from the State of Connecticut.

20 Q So the developer of the project didn't buy out  
21 the oyster farms?

22 A (Whitney) I don't know that they bought them  
23 out. I'm not involved in that aspect of  
24 projects.

1 Q In CFP 2, page 8, lines 9 to 10, you said that  
2 the use of HDD for cable landfall installation  
3 is also very common where nearshore impacts must  
4 be avoided, correct?

5 A (Whitney) That's what it says, yes.

6 Q I mean, you agree with that still?

7 A (Whitney) Yes.

8 Q And in your July Supplemental Testimony, Exhibit  
9 3, page 8, I believe it's, it was on this page  
10 that you suggested that the SEC ought to  
11 consider using HDD for the landfall approach at  
12 one of the landfalls and jet plow at the other.  
13 At least you said that that was an option to  
14 consider, correct?

15 A (Whitney) Yes. We said it would also be  
16 possible. Yes. Lines 13 to 15 on page 8.

17 Q Now, what factors, if the SEC is going to  
18 consider that, what factors should they consider  
19 in deciding which, if either landfall could be  
20 used for that?

21 A (Whitney) There are a number of factors within,  
22 if we take from mean high water out into the  
23 Little Bay, the balancing of extent of sediment  
24 disturbance for jetting or beach landing versus

1 HDD. The impact or the time impact in terms of  
2 how long construction vessels would be in Little  
3 Bay, between the two. The need to dredge at the  
4 HDD exit versus not having to do that with a jet  
5 plow. On land there's certainly, there's the  
6 land clearing or the setup, the time involved,  
7 are there neighbors close to where the HDD is  
8 located, noise impacts.

9 So it's a bit of a tradeoff so you kind of  
10 have to look at those types of things on both  
11 sides.

12 Q CFP 2, page 2, and I'm looking at lines 8 to 11.  
13 You talk about, and I may not have this cite  
14 exactly right, and I apologize if I don't, but I  
15 know you talked about frackout here in your  
16 testimony. Is that fair to say?

17 MR. IACOPINO: Mr. Patch, you skipped down  
18 a page when you hit your mouse. There you go.

19 Q 8 to 11, I guess it is.

20 A (Whitney) Yes. On line 10 and 11 we said or  
21 actually 9 through 11. "It is also possible  
22 that geologic conditions (loose sediment,  
23 fractured rock) can cause a lack of circulations  
24 and escape of the drilling mud, which is known

1 as a frac-out."

2 Q Are you familiar at all with the other, the HDD  
3 project that was done for a gas transmission  
4 line on the Piscataqua River here in New  
5 Hampshire?

6 A (Whitney) I'm not familiar with that, no.

7 Q Have you looked at the record on that at all?

8 A (Whitney) No.

9 Q I have a couple of exhibits that I guess I would  
10 just like to show you quickly. I won't get into  
11 it in too much detail, but I think it's  
12 important for the record. And the first one is,  
13 which we have marked as TD-UNH Exhibit 28, and  
14 on page 24 there's a paragraph that begins, and  
15 I'll represent to you that this is testimony by  
16 a senior gas engineer at Granite State Gas  
17 Transmission Company. There's a paragraph where  
18 he talks about frac-out, and he concludes with  
19 this statement on lines 5 to 7, he says I want  
20 to reassure the Committee that it's a minimal  
21 potential impact.

22 Now, I know you don't know all the details  
23 of that project, but would you agree that there  
24 are some situations where frac-out is a minimal

1 potential impact?

2 A (Whitney) Yes.

3 Q And I want to show you whether what we marked as  
4 Exhibit TD/UNH 29 which is the, it's the  
5 Committee order in that docket, the Site  
6 Evaluation Committee order, and I'm on page 5,  
7 and I have highlighted the sentence there where  
8 it says the horizontal directional drilling  
9 technique will not have a major unreasonable  
10 impact on the natural environment, the air or  
11 water quality, marine life or habitat or  
12 historic resources.

13 Did I read that correctly?

14 A (Whitney) You did.

15 Q Would you admit that there is some situations  
16 where HDD, that would be the case, and certainly  
17 this Committee found that in that case?

18 A (Whitney) I would agree that there is a  
19 potential like with anything that an HDD could  
20 have a major unreasonable impact. I can't speak  
21 to whether that's what the Committee found in  
22 this case because I'm looking at one paragraph  
23 here.

24 Q I'm looking at CFP 3, electronic page 7, and I'm

1 looking at line 10, and it says the EFH, the  
2 Essential Fish Habitat assessment states at page  
3 8 that a plan for monitoring of magnetic fields  
4 has not been established at this time but will  
5 be provided to the regulatory agencies for  
6 review and comment when it is prepared. It is  
7 ultimately a decision for the SEC as to whether  
8 to require submission of this monitoring plan  
9 before a decision is made for this Project.

10 Did I read that correctly?

11 A (Whitney) You did.

12 Q What is your understanding of what has been  
13 worked out between Eversource and DES with  
14 regard to this issue? Will the SEC see a  
15 monitoring plan before they make a decision?

16 A (Whitney) My understanding, and I think this is  
17 in, subject to check, it's in the August 31st  
18 letter. I think there is, there was description  
19 in there that a plan does need to be provided,  
20 the timing of which I don't recall.

21 Q Now, does that take into account the impact of  
22 electromagnetic fields on Essential Fish  
23 Habitat?

24 A (Whitney) Can you restate the question?

1 Q I think you were just talking about the plan  
2 that they were coming up with, and I guess I  
3 wanted to probe your understanding of whether or  
4 not that plan would take into account the impact  
5 of electromagnetic fields on Essential Fish  
6 Habitat.

7 A (Whitney) Do you have a condition under the DES  
8 letter?

9 Q I don't have a specific site to it. I don't  
10 think it refers at all to Essential Fish  
11 Habitat. That's my understanding.

12 A (Whitney) That's what I was looking for.

13 Q That was your understanding as well?

14 A (Whitney) I'm not sure. That's why I wanted to  
15 look.

16 Q I mean, if you want to look during a break or  
17 whatever and get back and clear up the record,  
18 that would be fine.

19 A (Whitney) We can do that, yes.

20 Q And do you have any idea what the  
21 electromagnetic plan will look like?

22 A (Whitney) No.

23 Q And how that plan would work, what measurements  
24 would have to be exceeded for supplemental steps

1 to be taken to address an EMF issue? Do you  
2 have any understanding of that?

3 A (Whitney) I don't, no.

4 Q Are you familiar with the stipulations that  
5 Counsel for the Public and Eversource have filed  
6 with the SEC? And I'm looking here at  
7 Applicant's Exhibit 193.

8 I'm sorry. This is taking me a while to  
9 find it. I thought it I had it open.

10 Anyway, there is a paragraph 35 in that  
11 which I would like to take a look at. It says,  
12 further ordered that, if the results of the  
13 electro-magnetic fields measurements exceed the  
14 guidelines of the International Committee on  
15 Electromagnetic Safety or the International  
16 Commission on Non-Ionizing Radiation Protection,  
17 the Applicant shall file with the SEC a  
18 mitigation plan designed to reduce the levels so  
19 that they are lower than the ICES or ICNIRP  
20 official guidelines.

21 Did I read that correctly?

22 A I believe you did. Yes.

23 Q And do you know whether that takes into account  
24 the impact on the Essential Fish Habitat?

1 A I don't.

2 Q Doesn't appear to, does it?

3 A (Whitney) I don't know.

4 Q I'm looking at CFP 3, and I'm looking at  
5 electronic page 7. And the question was are  
6 there any data gaps or concerns that have not  
7 been addressed by the Applicant. And again,  
8 this was your July 20th of this year testimony.  
9 And the answer was yes, the Applicant continues  
10 to state that decommissioning the line is not  
11 anticipated, and therefore has not submitted a  
12 decommissioning plan. Then you go on to  
13 indicate that regulators sometimes require a  
14 decommissioning plan to ensure appropriate  
15 action is funded and implemented in the event  
16 the cable is taken out of service. And it's  
17 ultimately a decision for the SEC as to whether  
18 to require submission of a decommissioning plan.  
19 Did I characterize that correctly?

20 A You did, yes.

21 Q In terms of decommissioning, I think you know  
22 that the Applicant asked for a waiver from  
23 having to provide a plan. Is that fair to say?

24 A (Whitney) I'm not sure what the actual request

1 was.

2 Q But you'd accept that, subject to check?

3 A (Whitney) Subject to check, yes.

4 Q And then I want to look back again at the  
5 stipulations we were talking about, and in the  
6 next paragraph, 36, further ordered that in the  
7 event that the project ceases to be used and  
8 useful, the Applicant shall be obligated to  
9 decommission the Project in accordance with then  
10 applicable rules of the SEC or a successor  
11 regulatory body. Did I read that correctly?

12 A (Whitney) You did.

13 Q I mean, that, to me, essentially says no  
14 decommissioning plan now and no funding set  
15 aside now, and that seems to be a little  
16 different than what you were saying in your  
17 testimony.

18 Has your view of decommissioning changed  
19 from your testimony in July of this year?

20 A (Whitney) No. It hasn't. Decommissioning,  
21 well, what I pointed out in our testimony was  
22 that some regulators do require a  
23 decommissioning plan.

24 For example, Pure Motion Energy Management

1           when they're doing offshore wind farms that is  
2           obviously in its infancy but really gaining  
3           tracks now. That's part of the submissions that  
4           go into that whole permitting project.  
5           Decommissions plans not only for the offshore  
6           wind farm but also for the cabling that goes  
7           with it as well. But not, every state is  
8           different, every federal agency is different.  
9           So it's just kind of a point of, a pointing out  
10          as Counsel for the Public's consultant that it's  
11          something for the SEC that they should decide  
12          whether they need it or if they do not.

13        Q     That's all the questions I have. Thank you.

14                   PRESIDING OFFICER WEATHERSBY: Thank you.  
15           Attorney Patch. Our next questioner will be  
16           Mr. Hebert. Town of Newington.

17                   MR. HEBERT: No questions today.

18                   PRESIDING OFFICER WEATHERSBY: No  
19           questions. Attorney Irwin?

20                                   **CROSS-EXAMINATION**

21        **BY MR. IRWIN:**

22        Q     Good afternoon.

23        A     (Whitney) Hi.

24        Q     I'm Tom Irwin, Conservation Law Foundation.

1 Mr. Whitney, you in response to questions from  
2 Mr. Patch about the jet plow trial run discussed  
3 the type of information that might be generated  
4 by that?

5 A (Whitney) Yes.

6 Q Information such as monitoring of the plume, its  
7 extent, the time it might survive?

8 A (Whitney) That's correct. Yes.

9 Q Do you consider that that information will be  
10 useful to the Department of Environmental  
11 Services?

12 A (Whitney) I believe it could be, yes. I believe  
13 it could help them.

14 Q Would you agree that it would be useful  
15 information for this Committee?

16 A (Whitney) I guess that goes to the question of  
17 where the Committee's timing is in the whole  
18 permitting process. There has to be a permit  
19 before a project can happen, obviously, so from  
20 what I understand of the SEC's role in this,  
21 it's siting, public need, environmental  
22 compatibility and whether that, I don't know how  
23 you could get to the point of having a jet plow  
24 trial without having the SEC provide a decision.

1 Q So you do understand that the Site Evaluation  
2 Committee is the ultimate decision maker here.

3 A (Whitney) That is my understanding, yes.

4 Q Okay. And I assume you understand that the  
5 impacts of the jet plow technology within Little  
6 Bay and the Great Bay system is of concern to a  
7 number of parties?

8 A (Whitney) Yes. I am.

9 Q And in fact, in part resulted in delays by the  
10 New Hampshire Department of Environmental  
11 Services in assessing the impacts of this  
12 Project?

13 A (Whitney) I believe that's part of the drawn-out  
14 schedule. Yes.

15 Q And the information that's in the record is all  
16 based on modeling; is that correct?

17 A (Whitney) I don't know that I would say it's  
18 completely correct. I would say the information  
19 in the record is based on modeling, but it's  
20 also based on some experience as well.

21 Q But the jet plow test run will be the first  
22 actual information generating data about the use  
23 of this technology in Little Bay, correct?

24 A (Whitney) With this Project, yes.

1 Q What about beyond this Project? Are you aware  
2 of jet plow technology having been used in  
3 Little Bay previously?

4 A (Whitney) I'm not, and that's why I qualified  
5 the answer. I don't know if there's been  
6 another project qualified before and that I'm  
7 not aware of.

8 Q You mentioned with respect to horizontal  
9 directional drilling that one of factors to take  
10 into account is the impacts of HDD on nearby  
11 residents. Did I characterize that correctly?

12 A (Whitney) Yes.

13 Q Are you aware of nearby residents' opinions with  
14 respect to the impacts that HDD might have on  
15 them?

16 A (Whitney) I am not, no.

17 Q Actually, I'll direct this question to both of  
18 you, were either or both of you part of  
19 discussions with the Department of Environmental  
20 Services regarding this Project after the  
21 department issued its February 2018 Final  
22 Decision?

23 A (Whitney) No.

24 A (Ladewig) I was not, no.

1 Q Thank you. I have no further questions.

2 PRESIDING OFFICER WEATHERSBY: I understand  
3 Durham Residents don't have any questions.  
4 Durham Historic Association? No questions. And  
5 Mr. Frizzell, Ms. Frink, Mr. Baker, and Nature  
6 Conservancy, no questions. Then we'll move to  
7 the Applicant.

8 **CROSS-EXAMINATION**

9 **BY MR. NEEDLEMAN:**

10 Q Mr. Whitney, Mr. Ladewig, we've met before. I'm  
11 Barry Needleman. I represent the Applicant. My  
12 questions are, I'll direct them to you, Mr.  
13 Whitney but either of you just feel free to  
14 answer at any point. I'm not looking for an  
15 answer from only one of you.

16 My understanding is that historically ESS  
17 generally handles environmental permitting  
18 including construction and postconstruction  
19 monitoring but not actual project construction;  
20 is that correct?

21 A (Whitney) That's correct. We're not in the  
22 business of constructing projects.

23 Q And I think at the Tech Session you told me that  
24 ESS had worked on at least 15 submarine projects

1           that had involved jet plow installations; does  
2           that sound right?

3           A     (Whitney) That sounds about right, yes.

4           Q     And you worked on jet plow projects as you said  
5           earlier in tidal estuaries, but you didn't, I  
6           think you said that one of them was the Hudson  
7           Transmission Partners project; is that right?

8           A     (Whitney) That's correct.

9           Q     What kind of line did that involve?

10          A     (Whitney) That was an electric transmission  
11          line.

12          Q     345 kV?

13          A     (Whitney) I believe it is 345, yes.

14          Q     Was the Bayonne Energy Center Project another  
15          one like that?

16          A     (Whitney) It was. That was a 345 line as well,  
17          AC.

18          Q     How long was the jet plow there; do you recall?

19          A     (Whitney) In terms of distance?

20          Q     Yes.

21          A     (Whitney) For Bayonne, I want to say it was  
22          about six and a half miles.

23          Q     Okay. And then I think you also told me you  
24          worked on the Connecticut Lake Power Project in

1 Norwalk to Northport; is that right?

2 A (Whitney) That's correct. Both of us worked on  
3 that.

4 Q How long was the jet plow there?

5 A (Ladewig) I don't know the length of the jet  
6 plow myself.

7 A (Whitney) I think the crossing there, I want to  
8 say it's 11 miles, but I really need to check  
9 that. It's been a while -- it's been many years  
10 actually since I looked at that project.

11 Q And your task here was you were hired by Counsel  
12 for the Public to conduct a technical review of  
13 the Project. Fair to say?

14 A (Whitney) That's fair to say. Yes.

15 Q And at the Tech Session I asked you how the  
16 Applicants proposal for crossing Little Bay here  
17 compared to other jet plow projects that you've  
18 worked on, and I think you said that in your  
19 experience the approach taken here was similar  
20 to those other projects; is that correct?

21 A (Whitney) Yes. It is. That's correct.

22 Q I want to direct your attention to your Prefiled  
23 Testimony. It's Counsel for the Public Exhibit  
24 1, and then also 1-A which is your report. This

1 is your July 31st, 2017, testimony, and I want  
2 to start at page 4, lines 1 through 8.

3 In this initial testimony that you filed in  
4 this case back in July of 2017 on lines 3 and 4,  
5 you say you identified some data gaps. Do you  
6 recall that?

7 A (Whitney) Yes.

8 Q And then in lines 6 and 8 you said however,  
9 despite those gaps the type of analysis that the  
10 Applicants did here was consistent with the  
11 types of analysis that you had performed and had  
12 seen performed on other Projects; is that right?

13 A (Whitney) That's what it says, right.

14 Q On page 6 of your testimony, same testimony,  
15 lines 12 to 15, you opined that the Applicant  
16 had adequately characterized the potential  
17 environmental impacts in Little Bay; is that  
18 right?

19 A (Whitney) We said that they're generally  
20 consistent with the type and extent of impacts  
21 that we've experienced on other submarine cable  
22 projects.

23 Q And at that time -- thank you. And at that  
24 time, you also made some additional

1 recommendations which I think we've talked about  
2 a little bit; is that correct?

3 A (Whitney) I believe we have, yes, with  
4 Mr. Patch's questions, yes.

5 Q If we jump ahead to Counsel for the Public  
6 Exhibit 3 which is your July 20th, 2018,  
7 Prefiled Testimony. On page 1, lines 18 to 21.  
8 So this is now a year plus later. You said that  
9 the data gaps that you had originally identified  
10 were largely addressed by the Applicant's  
11 September 2017 finding, correct?

12 A (Whitney) That's correct.

13 Q And on page 2, lines 1 through 6, I think you  
14 also said that the data that the Applicant  
15 provided in September of 2017 was helpful for  
16 reducing uncertainties associated with the  
17 Project.

18 MR. PATCH: Madam Chair, I would just like  
19 to object. I know you've been fairly strict  
20 about friendly cross, and it seems to me what  
21 he's doing now is friendly cross. He's pointing  
22 out the ways in which this Panel supports  
23 basically Eversource. And so, seems to me, you  
24 know, it's friendly cross, and he shouldn't be

1 allowed to do it.

2 MR. NEEDLEMAN: I don't think there's ever  
3 been a case where the Committee has considered  
4 Counsel for the Public's witnesses to be subject  
5 to friendly cross by any party. They're  
6 independent witnesses.

7 PRESIDING OFFICER WEATHERSBY: I think  
8 Attorney Needleman is correct, and I'll overrule  
9 the objection. You may continue.

10 A (Whitney) Could you restate the question?

11 Q Sure. The question was on lines 1 through 3 of  
12 that testimony, you said that the September 2017  
13 information helped reduce potential  
14 uncertainties; is that right?

15 A (Whitney) Yes. As noted below. Yes.

16 Q What kind of uncertainties were you talking  
17 about?

18 A (Whitney) We noted, for example, on lines 4  
19 through 6 there was, at one point there was  
20 discussion in the record about potentially using  
21 a Water-Lift for installation. And the  
22 September 2017 filing clarified that Water-Lifts  
23 would not be used, as an example.

24 Q Okay. You said that there was an issue with the

1 existing cable removal plan, and you suggested  
2 that a spill procedure response be developed,  
3 correct?

4 A Yes. We said that protocol should be prepared  
5 for identifying the procedure for spill response  
6 and reporting for any observed, yes.

7 Q And DES Condition 48, I think, provided for  
8 general spill prevention and cleanup plans.  
9 Does that condition address the concern that you  
10 raised here?

11 A (Whitney) I'd have to go back and read the exact  
12 wording of the condition, but if it requires a  
13 spill plan, then yes, it probably does.

14 Q And you also testified the time of year  
15 restrictions for the Little Bay installation you  
16 thought were reasonable and consistent with  
17 industry standards?

18 A (Whitney) We did, yes.

19 Q Very recently, and I want to put this up. It's  
20 Exhibit 203.

21 New Hampshire Fish & Game issued this  
22 letter. Have you seen this letter?

23 A (Whitney) Yes.

24 A (Ladewig) Yes.

1 A (Whitney) We have.

2 Q And this letter does talk a little bit about  
3 various times-of-year restrictions. Is what New  
4 Hampshire Fish & Game says in this letter?

5 MR. PATCH: I'm sorry to interrupt again,  
6 but we just received this letter. I believe it  
7 was recently after witnesses for the Applicant  
8 had testified so we have no ability to be able  
9 to ask them questions about it, and I think  
10 that's inappropriate. And I'd like to note my  
11 objection for the record.

12 MR. NEEDLEMAN: May I speak now?

13 PRESIDING OFFICER WEATHERSBY: Yes, please.

14 MR. NEEDLEMAN: It's an agency letter that  
15 was issued when the agency issued it. No one  
16 has any control over that. It's relevant to the  
17 Project so I'm asking the witness questions  
18 about it. I don't see anything inappropriate  
19 about that.

20 PRESIDING OFFICER WEATHERSBY: The  
21 objection is overruled. You may continue.

22 BY MR. NEEDLEMAN:

23 Q Mr. Whitney, with respect to this letter it  
24 talks about a couple of different times-of-year

1 restrictions. My question to you was whether  
2 this letter is consistent with and does it  
3 reinforce your prior conclusions regarding  
4 time-of-year restrictions?

5 A (Whitney) So from the first page here it looks  
6 like it's talking, it's referring to a fall  
7 installation, September/October, which I believe  
8 is what the Applicant has proposed is a fall  
9 installation. So it would appear to be  
10 consistent. It looks like there's another page.

11 Q There is.

12 A (Whitney) Yes. Again, it alludes to a submarine  
13 cable installation happening September to  
14 December which from my recollection is what the  
15 Applicant proposed throughout the record.

16 Q When Mr. Patch was questioning you, he asked you  
17 a little bit about concrete mattresses and the  
18 split pipe. Do you recall that?

19 A (Whitney) I do. Yes.

20 Q And I think you said that a split pipe  
21 potentially could have a less of a visual  
22 impact, correct?

23 A (Whitney) I did, yes.

24 Q Even though it may have less of a visual impact,

1 if a split pipe is technically infeasible, then  
2 you would agree it is not a viable option for a  
3 Project like this; is that fair to say?

4 A (Whitney) If it's determined to be technically  
5 infeasible, then yes.

6 Q And you noted that the Applicant's technical  
7 panel because of ampacity issues believed that  
8 it was technically infeasible, correct?

9 A I believe it was Mr. Wall's testimony that said  
10 that that I skimmed through, yes.

11 Q Do you have any basis to disagree with Mr. Wall?

12 A I do not.

13 Q On page 5, line 15, to page 6, line 16, of your  
14 testimony you talked about bathymetric  
15 monitoring and benthic infaunal monitoring. Do  
16 you recall that?

17 A (Whitney) Yes.

18 Q And Mr. Patch asked you about this as well.  
19 Both of these monitoring plans are plans that  
20 are required and need to be approved by DES  
21 before they're implemented; is that your  
22 understanding?

23 A (Whitney) I believe that's the case. Yes.

24 Q And if the Applicant works with DES to establish

1           these final plans to the satisfaction of DES,  
2           would that address any concerns you have about  
3           them?

4       A    (Whitney) Yes.  If DES, I would imagine that, I  
5           view that those plans are, seems to be where  
6           it's going is that it's almost like a  
7           post-certification activity.  Something that  
8           gets a final approval after this commission  
9           makes their decision one way or another.

10      Q    My understanding is that you have worked in  
11           other projects where there was pre and post  
12           comparison monitoring done for benthic  
13           organisms; is that correct?

14      A    We have.  Yes.

15      Q    Was one of those the Long Island Replacement  
16           Project?

17      A    (Ladewig) Yes, it was.

18      Q    And you did this kind of monitoring on that  
19           project?

20      A    (Ladewig) That's correct.

21      Q    And it's my understanding that on that project,  
22           you did not detect any significant differences  
23           pre and post jet plow; is that correct?

24      A    (Ladewig) Correct.  Although there were

1 differences in the data pre and post, we did not  
2 detect any that would imply a significant  
3 long-term changes.

4 Q And did you do the same kind of monitoring on  
5 the Bay on Project?

6 A (Whitney) We did.

7 Q Were the results the same there?

8 A (Whitney) They were similar to what Matt  
9 described, yes.

10 Q And on page 9, lines 3 and 4, you talk about jet  
11 plow modeling here. And you said, quote, the  
12 use of jet plowing waters of one state versus  
13 another are fundamentally no different. Do you  
14 recall that?

15 A (Whitney) Which exhibit are you referring to?

16 Q I am on --

17 A (Whitney) July 20th. I see.

18 Q And then you observed a little bit later that  
19 local sediments and wind currents may change  
20 from place to place and, therefore, modeling  
21 would be appropriate; is that correct?

22 A (Whitney) That's correct.

23 Q So, in other words, there's still an element of  
24 Project specificity here that has to be

1 addressed.

2 A (Whitney) Correct.

3 Q And then your July 20th, 2017, Technical Review  
4 report at page 11 which is Counsel for the  
5 Public's Exhibit 1 A, you talked about some of  
6 these issues, and I want to ask you some  
7 questions about those on page 11. Do you see  
8 the highlighted section?

9 A (Whitney) Yes. I do.

10 Q I don't want to read all of that text, but my  
11 question is with respect to where you talk about  
12 these types of analysis being typical of those  
13 used by ESS. What do you mean that? When you  
14 say that what's here is typical, what are you  
15 referring to? Other Projects you've worked on,  
16 industry standards?

17 A (Whitney) I would say it's projects that we've  
18 worked on and that we've seen that others have  
19 worked on in terms of the type of modeling that  
20 is done.

21 Q Are those the same Projects we've already talked  
22 about or are there others as well?

23 A (Whitney) There are a number of other projects  
24 that we've worked on and we've observed others

1 working on as well.

2 Q Okay. And in the same section at the bottom it  
3 says the results of the modeling are similar to  
4 our experience, and then you describe those.  
5 So, again, this is based on a range of jet plow  
6 projects that you've worked on?

7 A (Whitney) That's correct.

8 Q And let me go over to page 12. In the first  
9 paragraph, you say referring to the suspension  
10 assumption which is, as I understand it, the  
11 assumption that the Applicant's used with  
12 respect to the suspension of sediment in the  
13 water column. You said that it's considered to  
14 be conservative; is that correct?

15 A (Whitney) Yes.

16 Q That's passive voice. When you say considered  
17 to be conservative, who's considering that? Is  
18 that the industry, is that you?

19 A (Whitney) Probably a little bit of both.

20 Q And why do you think it's conservative?

21 A (Whitney) Just based on the results of the  
22 modeling that we've seen and the monitoring that  
23 has been done afterwards, what we've seen is the  
24 concentrations and to some extent the extent of

1 the plume is less than what the model predicts  
2 when it actually happens.

3 Q And then also on page 12 in the second  
4 paragraph, you said that you considered the  
5 dissipation rate to be quite rapid. Do you see  
6 that, end of the paragraph?

7 A (Whitney) I do. Yes.

8 Q Again, is that based on actual experience that  
9 you've personally had with jet plow projects?

10 A (Whitney) That's based on comparing results of  
11 other modeling we've seen where the sediments  
12 may be more finer grained, and the time it takes  
13 to get to that concentration above ambient is  
14 longer than what it was in this case.

15 Q On page 14, Section 2.12, in this original  
16 report, again, you talked about data gaps. Were  
17 those the same data gaps that you referred to  
18 earlier in your testimony?

19 A (Whitney) The testimony that was around the same  
20 time as this report. That's correct. Yes.

21 Q So these data gaps have also been resolved by  
22 the September 2017 filings; is that right?

23 A (Whitney) I believe they have, yes. Yes.

24 Q Now, in the Bayonne to Brooklyn Project that you

1 worked on, this was a Project that I think you  
2 said involved jet plow; is that right?

3 A That's correct.

4 Q And you told me at the Tech Session that between  
5 pre- and post-construction sampling, there was  
6 no discernible difference that was attributable  
7 to the jet plow; is that correct?

8 A (Whitney) Which pre and post sampling?

9 Q I think it was the sampling with respect to  
10 sediment deposition although I'm not certain.

11 A (Whitney) I think we may have been referring to  
12 the benthic.

13 A (Ladewig) Yes. I can confirm that for the  
14 benthic.

15 Q Okay. So with respect to the modeling that was  
16 used in that Project, am I correct that you also  
17 concluded modeling was conservative?

18 A (Whitney) We did. In that case, and this was  
19 the first time it had been done to our  
20 knowledge, the New York State Department of  
21 Environmental Conservation required that the  
22 Applicant not only do the pre and post, the  
23 jetting monitoring of turbidity and total  
24 suspended solids, but they also required that

1 after the installation was done and the modeling  
2 results were done and reviewed that a comparison  
3 be done between the model results and the  
4 monitored results, the actual results, and what  
5 that comparison found was that the model was,  
6 the results were consistent with what the model  
7 found, and numerically what it found was that  
8 the concentrations were less than what the model  
9 predicted.

10 Q Mr. Patch a moment ago put up an article that  
11 you wrote. It's Exhibit 210 if I could put that  
12 up there again. And Dawn, if you could go to  
13 page 6. And you are one of the authors on this  
14 article?

15 A (Whitney) I was, yes.

16 Q And that description that you just provided to  
17 us, is that the same description that's  
18 recounted here?

19 A (Whitney) It is. Yes.

20 Q And that's the same Project you were just  
21 talking about?

22 A (Whitney) Yes. Bayonne Energy Center Project,  
23 yes.

24 Q Did you also do the same kind of analysis on the

1 Hudson Transmission Project?

2 A We were not responsible for any of the  
3 monitoring for the cable installation on the  
4 Hudson Transmission Project. We were  
5 responsible for the permitting, and then when it  
6 went to construction the EPC or engineering  
7 procurement construction contractor was  
8 responsible for all that monitoring.

9 Q Was there modeling that was done on that Project  
10 as well?

11 A There was.

12 Q And do you know how the predictions and the  
13 modeling compared to the actual outcomes?

14 A (Whitney) I don't know in that case.

15 Q I think at the Tech Session you told me that in  
16 general the models that have been used in this  
17 particular case are conservative. Is that  
18 correct?

19 A (Whitney) That is correct. Yes.

20 Q And I think you also said, quote, the accuracy  
21 of the model is up to the modeler. Does that  
22 sound right?

23 A Yes, it does.

24 Q Am I correct that RPS who is the modeler here

1 was the same modeler for the Bayonne Project  
2 which is referenced in this article?

3 A I believe, yes. RPS. They were ASA at the  
4 time, but yes.

5 Q So when you say the accuracy of the model is up  
6 to the modeler, in your experience has RPS done  
7 a effective job of doing the modeling on the jet  
8 plow projects you've worked on?

9 A (Whitney) For the ones we have, yes. They were,  
10 the agencies found that to be acceptable. We  
11 found it to be acceptable, and permits were  
12 issued.

13 Q Aside from this Project that's up here, have you  
14 worked with RPS as a modeler in other jet plow  
15 projects?

16 A (Whitney) We have, yes.

17 Q Can you tell us which ones?

18 A (Whitney) Cape Wind Project. I believe they did  
19 the modeling on the Cross Sound Cable Project,  
20 which I believe was the first time we actually  
21 did this type of modeling. Bayonne, Hudson  
22 Transmission. And they may have done the  
23 modeling on the West Point Project as well. I  
24 don't recall.

1 Q Do you recall whether they worked on the  
2 Mid-Atlantic Power Pathway?

3 A (Whitney) They may have. Yes.

4 Q How about the Poseidon Project?

5 A (Whitney) They did not do the modeling on that  
6 one for us.

7 Q PSEG Hudson Project?

8 A (Whitney) I believe they did.

9 Q So is it fair to say --

10 A (Whitney) That's going back a number of years.

11 Q Is it fair to say in your opinion that RPS does  
12 a good professional reliable job with its  
13 modeling?

14 A (Whitney) They have on the projects they've  
15 worked on for ESS.

16 Q Mr. Patch asked you earlier about the Project  
17 you worked on where a jet plow went through a  
18 shellfish bed. Do you recall that?

19 A (Whitney) I recall him asking that, yes.

20 Q Was that the Cross Sound Cable Project?

21 A (Whitney) It was Cross Sound Cable Project and  
22 the Norwalk to Northport Project for CL&P and --

23 Q So those two separate --

24 A (Whitney) There were two projects that crossed

1           these beds, yes.

2           Q     In both of those, the jet plow went directly  
3           through the bed?

4           A     (Whitney) That's correct.

5           Q     In either of those Projects, are you aware of  
6           any complaints or any documentation after the  
7           fact indicating that those oyster beds suffered  
8           any adverse impacts as a result of the jet  
9           plowing?

10          A     (Whitney) On the Cross Sound, I'm aware of one  
11          complaint that was received, and it was proven  
12          to be frivolous based on timing.

13          Q     Is that the only complaint you're aware of in  
14          either Project?

15          A     (Whitney) That's the only one that I'm aware of.  
16          That doesn't mean there may not have been others  
17          that I'm not aware of.

18          Q     Understood. I want to go to your Exhibit 2, the  
19          July 2nd, 2018, Prefiled Testimony. I'm looking  
20          at page 9, lines 11 to 14. This is where you  
21          indicate, we talked about this earlier, that you  
22          have been involved in jet plow trial runs; is  
23          that right?

24          A     (Whitney) We have. Yes.

1 A (Ladewig) Yes.

2 Q And you already described to Mr. Patch generally  
3 what these trial runs are used for; do you  
4 recall that?

5 A (Whitney) I do.

6 Q At the Tech Session, you gave me examples of the  
7 Bayonne Energy and Cross Sound Cable Projects as  
8 ones where you did these kinds of trial runs; is  
9 that correct?

10 A (Whitney) That's correct.

11 Q Did the agencies in those cases find the trial  
12 runs to be helpful?

13 A (Whitney) You have to ask them, but I believe  
14 that they did.

15 Q When you say you believe they did, why do you  
16 believe that?

17 A (Whitney) I believe they found it helpful in  
18 understanding the process, but, again, you'd  
19 have to ask them for whether it was helpful or  
20 not.

21 Q Am I correct that Marc Dodeman who testified on  
22 the Applicant's Construction Panel was the lead  
23 installer on the Bayonne Project?

24 A He was one of the lead installers, yes, on

1 Bayonne.

2 Q On page 9, line 16 to 27 of your testimony, you  
3 discuss jet plow trial runs. Again, and you  
4 talk about the same jet plow and cable laying  
5 vessel being used in those runs, and Mr. Patch  
6 asked you earlier about why that would be  
7 important, and I think you described the  
8 advantages of that.

9 A (Whitney) Well, what Mr. Patch was asking  
10 specifically was about the personnel being  
11 involved.

12 Q Okay.

13 A (Whitney) Same personnel. That was his line of  
14 questioning.

15 Q All right. So beyond the personnel, focusing on  
16 the equipment, is there a reason why you think  
17 it would be advantageous for the same equipment  
18 to be used?

19 A (Whitney) I think you're taking, you're making  
20 the trials more consistent with what the  
21 installer would be because you've got the exact  
22 same equipment set up, everything is set up the  
23 exact same way.

24 Q And if you do the jet plow trial run months in

1 advance, in your experience does it make it more  
2 difficult to have exactly the same equipment?

3 A (Whitney) I don't have experience with doing jet  
4 plow trials that far in advance, but knowing the  
5 way that this equipment is booked years in  
6 advance in terms of their schedules, having the  
7 exact same piece of equipment at a 6-month  
8 interval or a year or what have you may be more  
9 difficult because the equipment is, it doesn't  
10 make money when it's sitting in the yard so it's  
11 booked pretty far out.

12 Q I think you said that the Bayonne and Cross  
13 Sound Projects were done days in advance; is  
14 that right?

15 A (Whitney) Yes. I think it was within -- days  
16 meaning one to two weeks. Maybe as far as three  
17 weeks. I think Bayonne was around 20 days if I  
18 remember correctly, but I have to double-check  
19 that.

20 Q Do you recall what the length of the trial run  
21 was in Bayonne?

22 A (Whitney) I believe it was about 1000 feet.

23 Q And did you find that to be sufficient for the  
24 purposes of the trial run?

1 A (Whitney) We did in that case, yes.

2 Q Did the agency find that to be sufficient?

3 A (Whitney) They did.

4 Q On page 10, lines 7, over to page 11, line 3,  
5 you talk about why trial runs are performed in  
6 advance, and you've hit on some of those things.

7 You didn't talk at all about seasonality  
8 yet. Is there an importance with respect to  
9 seasonality of impacts?

10 A (Whitney) Well, obviously, the tides change  
11 throughout the year, and if you have a fall  
12 install like we talked about earlier in your  
13 questioning, if you do it six months before,  
14 that's spring. And in the springtime you may  
15 have freshets, snow melt that you don't have in  
16 the spring so that there is a potential for a  
17 difference in conditions, environmental  
18 conditions, depending how far, how longer that  
19 span is between installation and the general  
20 trial.

21 Q You also noted in your testimony that if the  
22 trial run is separated by several months it  
23 could add significantly to cost; is that right?

24 A (Whitney) Yes.

1 Q Aside from the obvious reason of it just being  
2 more expensive, is there any other reason why  
3 that's significant to you?

4 A (Whitney) Why the cost is significant to me?

5 Q Yes.

6 A (Whitney) Ultimately, a lot of the stuff is,  
7 these Reliability Projects, they're borne by the  
8 ratepayers. So when you're looking at  
9 economics, what is the economics to the  
10 ratepayer. While that's not something that I  
11 think about in terms of making decisions, we're  
12 more on the permitting end, it is something that  
13 I'm aware of. But the main thing is just the  
14 logistics and the cost associated with bringing  
15 equipment in, using it, taking it down, and then  
16 doing it all over again at another period of  
17 time for the installation. There's obviously a  
18 time and a financial cost associated with both.

19 Q On a project like this one with, say, a 1000  
20 feet of trial run, do you have any sense at all  
21 of what the difference in cost would be between  
22 doing it a week to two weeks before the Project  
23 versus doing it several months before the  
24 Project?

1 A (Whitney) Specifically, no.

2 Q Do you have any ballpark?

3 A (Whitney) I would have to think that a separate  
4 mobilization, it would be greater than six  
5 figures I would have to imagine, just knowing  
6 the types of equipment that are involved and the  
7 costs of doing construction on the ocean.

8 Q Going back to the Applicant's cable removal  
9 plan, you're aware that they do now have one.

10 A (Whitney) Yes, I am. Yes.

11 Q And you're aware that DES has approved that  
12 plan?

13 A (Whitney) I believe that's the case, yes.

14 Q And so to the extent that you had concerns about  
15 it at some point, I assume you're now satisfied?

16 A (Whitney) Yes.

17 Q Mr. Patch was asking you some questions about  
18 HDD earlier, and he asked you to go through the  
19 various factors that cut one way or the other.  
20 Do you recall that?

21 A (Whitney) I do.

22 Q The Applicants filed an HDD report here which  
23 you then submitted testimony on last July. Do  
24 you recall that?

1 A (Whitney) I do.

2 Q Mr. Patch asked you are there some situations  
3 where, I think he showed you actually some  
4 testimony where frac-outs could have just  
5 minimal potential impact, and you agreed that  
6 there are some such situations; do you recall  
7 that?

8 A (Whitney) I do, yes.

9 Q Is it also true where frac-outs could have very  
10 substantial environmental impacts?

11 A (Whitney) Yes, depending on the nature of the  
12 frac-out, yes.

13 Q And Mr. Patch noted that this particular estuary  
14 is one of national significance; do you recall  
15 that?

16 A (Whitney) I do.

17 Q So to the extent that a directional drill were  
18 done here and there were a major frac-out, given  
19 that it's an estuary of national significance,  
20 do you have a view about what the impacts could  
21 be from an environmental perspective?

22 A (Whitney) It would depend really on the nature  
23 of the frac-out. To guess at what the impacts  
24 would be is a little bit speculative at this

1 point.

2 Q My recollection is the Applicant's HDD report  
3 could not quantify the likelihood of a frac-out.  
4 Is that correct?

5 A (Whitney) Subject to check, I believe that's the  
6 case.

7 Q Is it fair to say, generally speaking, that it  
8 is extremely difficult to predict with any  
9 degree of certainty whether there's going to be  
10 a frac-out in a given project?

11 A (Whitney) From talking to HDD engineers and to  
12 drillers, as I have throughout my career, that  
13 is my understanding is they can, if they're  
14 drilling in rock, they believe it's a lesser  
15 chance, but it is, you don't know until you  
16 actually do it despite the testing that you may  
17 do.

18 Q The HDD report that the Applicant provided  
19 concluded that an HDD in a Project like this  
20 could be technically challenging. Do you recall  
21 that?

22 A (Whitney) I believe that's what it said, yes.

23 Q Do you have any basis to disagree with that  
24 conclusion?

1 A (Whitney) None at this moment. No.

2 Q You noted in your testimony, your July 20th  
3 testimony on page 8, line 8, that HDD in a case  
4 like this could be significantly more expensive  
5 than jet plow; do you recall that?

6 A (Whitney) That was CFP 2? Page 8?

7 Q Yes. I believe so. Or 3. July 20th testimony.

8 A (Whitney) I'm sorry. Which page was it?

9 Q I was on page 8, line 8.

10 A (Whitney) I'm not seeing the page where it's  
11 talking about cost. July 2nd. I'm sorry.

12 Q July 20th, page 8, line 8.

13 A (Whitney) We stated we agree that the general  
14 proposition that HDD approach would be  
15 significantly more costly than a jet plow  
16 installation.

17 Q And also in the HDD report, the Applicants  
18 posited that the on-shore environmental impacts  
19 on the Durham and the Newington side of an HDD  
20 could be significant and prolonged. Do you have  
21 any basis to disagree with that conclusion?

22 A (Whitney) I don't.

23 Q I think I'm all done. Thank you very much.

24 PRESIDING OFFICER WEATHERSBY: Why don't we

1 take a break and be back at 10 minutes to 3.

2 (Recess taken 2:34 - 2:52 p.m.)

3 PRESIDING OFFICER WEATHERSBY: Okay. We  
4 will resume with questions from the Committee  
5 members. Who'd like to start? Mr. Fitzgerald.

6 MR. FITZGERALD: Yes. Sure.

7 **QUESTIONS BY MR. FITZGERALD:**

8 Q Good afternoon, gentlemen.

9 A (Whitney) Hello.

10 Q Mike Fitzgerald. I'm the Assistant Director of  
11 the Air Resources Division of the Department of  
12 Environmental Resources. Mike Fitzgerald.

13 Couple of questions. Mr. Patch in his  
14 questioning of you referenced a DES document,  
15 and it was his Town of Durham and UNH Exhibit 12  
16 which was a report by DES, and he referenced  
17 electronic page 4 where it stated that Great Bay  
18 is a national treasure and a valuable resource  
19 and has been designated as an estuary of  
20 national significance. And I think he asked  
21 about that, that national treasure. Although I  
22 am from DES, we wrote this, that, is there any  
23 particular basis for that statement that you're  
24 aware of that it's a national treasure? Not

1           that I don't think it is or -- but that's an  
2           opinion, so to speak, isn't it? That the  
3           designation as national significance is the  
4           important issue here?

5       A     (Whitney) Yes. And that's why I was a little  
6           bit hesitant to answer Mr. Patch's question  
7           because that seems like it was an opinion  
8           statement about the national treasure part.

9       Q     Okay. And second, as an estuary of national  
10          significance, are there, I think you testified  
11          that you had done work in other estuaries of  
12          national significance? You had been involved  
13          with work that did some crossings through other  
14          estuaries of national significance?

15      A     (Whitney) I have, yes, and there are others as  
16          well where cables are installed that we may not  
17          have been involved in that I'm aware of. Yes.

18      Q     Are there any conditions in Great Bay based on  
19          the documents that you've reviewed here that  
20          would consider it to be of greater significance  
21          or more environmentally sensitive than other  
22          projects that, in estuaries of national  
23          significance that you've been involved with?

24      A     (Whitney) I think the difference in Little Bay,

1           one of the differences is it's not as developed  
2           as, say, the area around the Lower Hudson River.  
3           Obviously, New York City is there, northern New  
4           Jersey is there, so I think in that regard it's  
5           different. But if you get into other parts of  
6           the Hudson River estuaries, you go farther  
7           upstream, and we've worked as far north as  
8           Athens in the Hudson River, it is more similar  
9           to what you see in Little Bay where there's,  
10          there are scattered buildings along the edges of  
11          the river, there's still vessel traffic going  
12          back and forth.

13                 The Delaware River is also similar to  
14          Little Bay. Wider obviously. But in terms of  
15          the environment, I think one of the different,  
16          and Mr. Needleman brought up the Fish & Game  
17          letter talking about sturgeon, and basically  
18          Fish & Game from what I read quickly in that  
19          letter was saying that they didn't view that as  
20          being an issue, whereas in other estuaries  
21          sturgeon are more of an issue than they would be  
22          in Little Bay.

23          Q        Okay. So to hone in on that a little bit more,  
24          those areas, for instance, in New York where it

1 is more significantly developed, would you  
2 consider those to be somewhat more sensitive or  
3 that they're so impaired that these Projects  
4 wouldn't necessarily do harm?

5 A I wouldn't necessarily say that they're  
6 impaired. I think the Lower Hudson River off  
7 from New York City is, it was impaired and it's  
8 certainly been cleaned up. There's certainly  
9 the issues farther up the Hudson River that  
10 everybody is aware of with GE, but I wouldn't  
11 necessarily characterize that area as being  
12 impaired. There's a lot of, and Matt can weigh  
13 in here. There's a lot of biological activity  
14 happening in the Hudson River despite being  
15 right off of New York City.

16 So I think you're seeing that, every water  
17 way is little bit different in that different  
18 fish or waterfowl or other species gravitate to  
19 certain areas because that's where their  
20 foraging is. So I think they're all just, while  
21 they're unique, I think they're all somewhat  
22 similar, too.

23 Q So I guess getting to the root of the matter,  
24 are there conditions based on the documents that

1           you've reviewed, the information that you've  
2           seen here, are there conditions in Great Bay  
3           that would, that you feel would warrant -- I  
4           think some of your documents you have used the  
5           term HDD could be used or may be, or may be an  
6           approach, that sort of thing. Are there  
7           conditions at either of the two landfalls or in  
8           the Bay channel itself that you feel would  
9           warrant significant further consideration of HDD  
10          either on a short basis landfalls or a long-term  
11          basis?

12        A    (Whitney) I think there's nothing that stands  
13          out as being oh, wow, we didn't really -- like  
14          one of the attorneys I forget which asked me  
15          about the cable from Cape Cod to Martha's  
16          Vineyard and whether HDD went under any eelgrass  
17          there, and I said that would not surprise me  
18          given that that's a lot of eelgrass off the  
19          south shore of Cape Cod. I think if that, if  
20          there was eelgrass in that location, then I  
21          would feel more strongly about it.

22                I think in this location, I could see it  
23          being either way really, and I don't think that,  
24          I don't see in the record DES raising a red flag

1 about doing the jetting and the hand jetting at  
2 the shore fall. So that says to me that it  
3 could go either way. It's just a decision that  
4 somebody has to make, whether it's technically  
5 or regulatorily.

6 Q And are you aware of any eelgrass that could be  
7 impacted at either of the proposed landfalls in  
8 Durham or Newington?

9 A (Whitney) I think from reviewing the  
10 environmental maps that were in the Application,  
11 they don't indicate that there's submerged  
12 aquatic vegetation or eelgrass at those  
13 locations so I'm not aware that there is.

14 Q So from an environmental -- go ahead.

15 DIR. WAY: Thank you. Just to follow up  
16 that point about the eelgrass. If eelgrass  
17 hypothetically was at this location, would that  
18 be enough for you to say, could go one way or  
19 another, would that be enough to tip the scales?  
20 Or is --

21 A (Whitney) In my opinion, if I were looking at it  
22 from an environmental consultant perspective, I  
23 would say yes. All things being equal and there  
24 is eelgrass at that location, then I would say

1           that would, that would push my mind more in  
2           favor of doing a directional drill there to get  
3           under that eelgrass bed if you could get that  
4           far out.

5           MR. WAY: Thank you.

6 BY MR. FITZGERALD:

7 Q       And with regards to, we had some discussion and  
8       discussion about the probability of frac-out. I  
9       think we've also heard it referred to as IR,  
10       inadvertent return.

11 A       (Whitney) Um-hum.

12 Q       As I, I think I understand your testimony was  
13       that while the possibility was relatively  
14       remote, it could, if it were to happen, it could  
15       be a substantial issue if there were to be a  
16       large, a significantly large IR.

17 A       (Whitney). Yes, so again --

18 Q       Is this a low probability, high risk? High  
19       probability, low risk?

20 A       (Whitney) I think really it depends upon the  
21       nature of the frac-out, and if, and also I think  
22       it also determines, it's a point of after it  
23       starts happening, when is it discovered. If  
24       it's far away from the drill. And it doesn't

1           happen to get discovered, is it, it doesn't show  
2           at the surface or you don't see any surface  
3           expression, it's not like you're going to have  
4           divers patrolling, swimming up and down this  
5           line all the time, right?

6           So you're looking for some sort of either a  
7           surface expression or the driller saying I'm  
8           losing pressure, I'm losing circulation, and  
9           it's constant. So I'm losing fluid somewhere.  
10          If that's a long duration and a lot of this is  
11          pumping out onto the bottom, it depends how far  
12          it spreads into whether it's a major, you know,  
13          a more significant environmental issue.

14          That being said, the directional drill, the  
15          drilling muds, the bentonite, there's additives  
16          that they put in there, and I think that's part  
17          of the record as well that they put additives  
18          into it such that when it comes in contact with  
19          saline marine waters, that the material, because  
20          this is clay. It flocculates, coagulates, and  
21          becomes a mass on the bottom which makes it  
22          easier to clean up because it's sitting on the  
23          bottom rather than being dispersed through the  
24          water column by the tides.

1 Q And what type of hazard does it pose when it is  
2 released if it were released?

3 A (Whitney) Again, it is clay so it's bentonite  
4 material. I once heard a driller says it's the  
5 same material that's in makeup that women wear,  
6 but I think one of the impacts of the  
7 environment is potential smothering of whatever  
8 the benthic biota might be in the, on the  
9 riverbed or the Bay bed in this case.

10 Matt, I don't know if you have anything to  
11 add in terms of biological effects.

12 A (Ladewig) I think that sums up the gist of it.

13 Q So it doesn't have any toxic components to it  
14 that would have, you know, or other components  
15 that would have an impact on marine life or --  
16 just the possibility that it would settle on the  
17 bottom?

18 A (Ladewig) My understanding is that it's mostly  
19 inert.

20 Q Okay. And do you have experience, either of  
21 you, in Projects that have involved significant  
22 lengths of HDD?

23 A (Whitney) Yes. We've had a couple projects.  
24 Cross Sound Cable Project had an HDD and that

1 one was probable on the order, going back a  
2 ways, but say like 800 to 1400 feet, somewhere  
3 in that realm. The Bayonne Energy Center  
4 Project, those drills were around that same 12  
5 to 14 hundred foot length times 3. There were  
6 three bores for that project.

7 Q And do you know how the potential for HDD IR or  
8 not the potential but how, you mentioned  
9 monitoring by pressure, and I think we heard  
10 this from the Construction Panel also that if  
11 they're monitoring that that it should, that it  
12 shouldn't last for hours but it can. I guess.  
13 But what's your experience in terms of, A, have  
14 IRs occurred on projects that you've been on and  
15 how are they discovered and how significant of  
16 an impact they are.

17 A (Whitney) I think on the cross, my  
18 understanding, and I wasn't involved in that  
19 aspect of the construction. Cross Sound Cable I  
20 was working on the Long Island side for the  
21 landfall, but my understanding was that there  
22 was a small frac-out that happened when they did  
23 the directional drill on the New Haven side, and  
24 it was cleaned up relatively -- discovered

1 relatively quickly and it was cleaned up  
2 relatively quickly by divers. They sent the  
3 divers down and cleaned it up. On the Bayonne  
4 there were three bores, and there was not to my  
5 knowledge a frac-out on that.

6 Q So are you aware of any reason specifically not  
7 to use HDD here based on what you've told me  
8 about frac-out being the most significant  
9 problem?

10 A (Whitney) The only, again, and I'll defer to the  
11 engineers on this because they're a lot smarter  
12 than me.

13 Q I'll qualify that as other than cost and time.

14 A (Whitney) Yes, I think --

15 Q Are there environmental reasons?

16 A (Whitney) I think environmentally I think about  
17 if I'm thinking about this location that there  
18 are residences that are nearby. I think about  
19 noise. And I think about duration of impact.  
20 And that's the tradeoff is that the HDD process  
21 takes time to do. It's just the way it is. And  
22 is that a much more significant duration than  
23 doing a jet flow and a diver type of  
24 arrangement, an impact on those abutters than,

1 is that something that's more of a problem for  
2 those people than others. But environmentally.  
3 The other thing I think of, too, and again, I  
4 defer to engineers, but are they drilling  
5 through rock, is the rock competent. Those are  
6 the types of things the engineers would be  
7 thinking of. Again, with frac-out and just the  
8 ease of drilling. In the directional drill  
9 companies that I've talked to, they always say  
10 the worst thing that can happen is for them to  
11 have a drill profile that is kind of bumping  
12 along that rock sediment interface because  
13 they're drilling into one at one pressure and  
14 then one's got a different pressure, and that's  
15 when they tend to get more potential for a  
16 frac-out.

17 Q And are there, I think you testified that the  
18 information that the jet plow trial run was  
19 going to generate, you weren't clear on what  
20 specific information was going to be gathered  
21 and reported, what the criteria would be for  
22 approving that trial run. Is that correct?

23 A (Whitney) Correct. I haven't seen a report that  
24 says, I haven't seen a plan for how the trial

1 run would be done.

2 Q Okay.

3 A (Whitney) That was kind of the point of my  
4 answer.

5 Q And what the criteria --

6 A (Whitney) What the criteria and what exactly  
7 would get reported and when, although when is a  
8 little bit covered in DES's conditions now.

9 Q Would you expect that a jet plow trial run would  
10 uncover or provide information that might  
11 suggest that HDD would be preferred or would it  
12 be just this is the jet plow trial run, here's  
13 the information we gathered, and we need to  
14 specifically address conditions that come up in  
15 terms of how the trial run, you know, what the  
16 results of the trial run were and you need to be  
17 careful about specific things. Or would you  
18 think that it might come up with something that  
19 says you should try an alternative approach?

20 A (Whitney) I think it would be the latter because  
21 I think, if I think about where a jet plow trial  
22 would be done, it's not going to be done at the  
23 shore falls. They'll want to do it in deeper  
24 water where they're really, they know they're

1 going to be trying to get to whatever the  
2 maximum, the 42-inch burial depth that they're  
3 going to get to. I think that's where the trial  
4 would happen. So I don't know that that's going  
5 to give you the information to say oh, wait, we  
6 have to do HDD.

7 What it might give you is it might tell you  
8 before the cable is installed that there's, say  
9 there's a hump of rock that the plow hits and  
10 you may not get burial. So that may provide  
11 information to see all right, well, this is an  
12 area where potentially mattresses may need to be  
13 used. To kind of hone in on this.

14 Q And last, I asked this question of Construction,  
15 that the HDD trial run, I mean the jet plow  
16 trial run, excuse me, is a thousand feet which  
17 is roughly 20 percent of this Project. In your  
18 experience, has that been the sort of length  
19 that would be sufficient to provide information?  
20 It's pretty long trial run.

21 A (Whitney) Yes, I think the other Projects that  
22 we've been involved with, that's been the length  
23 that's been chosen. I don't know if it's  
24 because it's a round number, but it seems to be

1 that's what the installers always talk about,  
2 regulators will talk about, we want a thousand  
3 feet. That gives you a fair distance. In some  
4 cases it's a smaller percentage. Bayonne was, I  
5 testified earlier, was about six and a half  
6 miles and we did a thousand foot trial run  
7 there.

8 Q So if they limited that to 999 feet we'd be  
9 okay?

10 A (Whitney) 999.5. Yes.

11 Q Thank you very much. I appreciate your answers.

12 A (Whitney) You're welcome.

13 MR. IACOPINO: I have a followup on that.  
14 In your Bayonne Project, was that thousand  
15 consecutive feet or did they go 300 feet and  
16 then move on and then do another 300 feet and  
17 then --

18 A (Whitney) I believe they did a thousand  
19 consecutive feet, and that was a requirement in  
20 New York State so that was done in New York  
21 State waters. New Jersey did not have a  
22 requirement for jet plow trial. So they did,  
23 they actually did a proving run in the portion  
24 of the New Jersey area. So they did a separate

1 trial, more so for installation in an area where  
2 they thought there was a potential that  
3 sediments were such that they may not be able to  
4 jet the cable in, and, indeed, that's what they  
5 did find, but there was a contingency plan in  
6 place for that for dredging because that area  
7 happened to be a crossing of a federal channel  
8 so we had to bring a dredge in and dredge out a  
9 trench and put a cable in that trench.

10 PRESIDING OFFICER WEATHERSBY: Mr. Way?

11 **QUESTIONS BY DIR. WAY:**

12 Q Good afternoon again.

13 A (Whitney) Hi.

14 Q So on the trial run, my understanding is we have  
15 21 days and DES needs two weeks to come up with  
16 their decision which means the Applicant has a  
17 week to get it to them. And I'm looking at the  
18 August 31st letter from DES, if the results of  
19 the trial run indicate that surface water  
20 quality standards will not be obtained during  
21 cable installation or if the results indicate  
22 that the model did not reasonably predict the  
23 suspended solids plume, the report should  
24 include recommendations regarding how these

1 issues can be abated.

2 Is that something in your experience that  
3 you can do in that short amount of time? I feel  
4 like a parent that keeps asking the same  
5 question. You know, really? You know. So in  
6 your mindset is that enough time to come up with  
7 those recommendations?

8 A (Whitney) I think in terms -- and your question  
9 is a little bit different than the question that  
10 was posed to me earlier today, but I think in  
11 terms of the time for coming up with those  
12 recommendations, I think that a team could pull  
13 that off. The question that was posed earlier  
14 to me was about the entire process. Seven days  
15 to do a report. And I testified something to  
16 the effect that that's really up to the  
17 Applicant. If they say they can do it, then  
18 they'll do it. So but I think in terms of the  
19 recommendations, a lot of that I think will get  
20 figured out as they're doing the jet plow trial  
21 where they may, if they're seeing that they're  
22 getting, if they're doing realtime monitoring,  
23 or sample, however they're doing it, if they're  
24 seeing those higher elevations of suspended

1 sediment, and they may, at least the way that we  
2 do it is when we're seeing that, our people will  
3 call back to the vessel, installation vessel.  
4 We're starting to see those high elevations.  
5 And then they'll start dialing back the pressure  
6 or changing the speed and seeing if that helps.

7 So I do think, I think it's possible that  
8 they could do that in 7 days, but ultimately  
9 it's up to the team that, to make sure that they  
10 can get it done, that they actually do it in the  
11 7 days.

12 Q I think you answered my next question. Is that,  
13 I get the feel a lot of this happens in realtime  
14 in terms of knowing what the issues are right  
15 while you're doing it. It isn't as much  
16 collecting data as much as going through the  
17 process and knowing what snags you hit, what  
18 you're seeing under the water at that point in  
19 time?

20 A (Whitney) That's correct, and the monitoring the  
21 way that we've done it is a two-fold process  
22 where there's realtime data collection through  
23 what's known as acoustic doppler current  
24 profilers that can see, they use the sound to go

1 through the water column. They can see changes  
2 in density, et cetera. There's also optical  
3 backscatter so that's looking at light and how  
4 far does light penetrate. So that's the  
5 realtime and then --

6 Q If I may interrupt. Are those practices going  
7 to be used in this case?

8 A I don't know if they have proposed those, that  
9 realtime. I think it's more based on water  
10 samples. Which is with the next piece of it  
11 that we do as well is we do the water sampling  
12 at the same time. We use the realtime to  
13 identify the plume. And then we go into the  
14 plume, we go back into the plume and do the  
15 water monitoring.

16 Our examples and the projects we worked on  
17 has been more of a "you shall meet a certain  
18 threshold," should be below a certain threshold  
19 milligram per liters at a certain distance down  
20 current from the plow. Here in New Hampshire  
21 it's more of a mixing zone approach, and my  
22 understanding is recently the mixing zone  
23 boundary is being changed to the modeled extent  
24 of the plume. So they're looking at that's the

1 defining area. So how they do that is really up  
2 to them. But I think the water samples really  
3 validate what the true milligrams per liter is  
4 because remote sensing is just that. It's  
5 remote sensing. So you do have to do some  
6 ground truthing, in this case with water  
7 samples.

8 Q It sounds like you're saying there's a couple  
9 ways to skin a cat here.

10 A Yes.

11 Q And so my question to you is knowing what you  
12 know, are there conditions that might, and I  
13 think you alluded to a couple, are there  
14 conditions that might make realtime more, make  
15 the reporting more efficient, feedback more  
16 efficient, that you might recommend?

17 A (Whitney) Yes. I would say just doing the  
18 acoustic doppler, the remote sensing at the same  
19 time, using that to identify where the plume is  
20 and running transects. And what we do when we  
21 do it, this is largely based on what the, the --  
22 state of New York is really big into water  
23 quality monitoring for jet plowing, and so  
24 that's obviously where most of the experience is

1 driven. Massachusetts was starting to get into  
2 it a little bit. I don't know if they're really  
3 following up on it lately, but like I said,  
4 there was 200 milligrams per liter at 500 feet  
5 down current is typically their standard above  
6 ambient.

7 So what we do is we set up transects so  
8 we're going to go a certain distance, we'll go  
9 up current to the plow so you get a background  
10 which is what the Applicant's proposing as well,  
11 and then we go around down current and look at  
12 where the plume is, and then we, what they do on  
13 the boat and, Matt, you've been out so you can  
14 probably explain this a lot better than me in  
15 terms of detail, but generally they go back,  
16 they look at the data that they just captured  
17 and they look at where the plume is, and they  
18 can go back to that location fairly quickly and  
19 take the water samples. Matt, I don't know if  
20 you want to, you've been out there on those  
21 jobs.

22 A (Ladewig) I have. Unfortunately, when I was out  
23 there everything was coming back fairly clean so  
24 we didn't have to do a lot of last-minute

1 response.

2 Q Attorney Needleman was asking you about the  
3 difference between a period of several weeks  
4 which I'm assuming is the 21 days versus several  
5 months which I think as I recall DES said 90  
6 days, and I understand what's being said.  
7 You've got equipment that you're leasing, it's  
8 sitting there, it's got a job to do versus it  
9 going in another location, having a setup some  
10 months later and then changes from the season,  
11 et cetera. Is there a sweeter spot in between  
12 which gives the Applicant time to assess, to  
13 analyze the data and report back to DES to give  
14 DES the time to respond? Because I'm really, we  
15 haven't really talked, I'm assuming that DES can  
16 do it in the 14 days if they said that they can  
17 do it in the 14 days, but is that the optimal  
18 amount of time or is there a better method in  
19 your opinion?

20 A (Whitney) I agree with you, if DES says they can  
21 review the data in 14 days you have to take them  
22 at their word for that, and I think it's really  
23 just what is the timing that the Applicant needs  
24 to pull the report together. Obviously, time

1 can't hurt. If it was another week, obviously,  
2 that gives the Applicant more time to assess  
3 data and analyze and potentially make a better  
4 report rather than something that's done in 7  
5 days but I don't think that, I don't know to  
6 answer your question if there's a sweet spot. I  
7 think it's really just how quickly the data can  
8 come back, how quickly it can get analyzed and  
9 then how quickly DES can do the same thing on  
10 their end. Peer review it and say yes, we  
11 understand this, and you're good or no, you're  
12 not, let's make these adjustments.

13 Q So asking you to speculate like it was unfair to  
14 do maybe a little bit earlier, in terms of DES  
15 do you think that DES, a state agency would be  
16 able to take this data that you're talking about  
17 and be able to come up with some sort of  
18 decision to look at the recommendations and say  
19 yes, we like this recommendation or we recommend  
20 that you do X, Y and Z. 14 days, do you think  
21 that that could actually occur?

22 A (Whitney) Again, it's up to DES, I think. I  
23 don't want to speak for DES, but if they say  
24 they can do it, then yes, you have to take them

1 at their word. I know it's not really answering  
2 your question, but I don't want to speak for DES  
3 on what they can and don't do either.

4 Q No, that's quite fair. Couple issues in terms  
5 of the mattresses. I don't know, were you here  
6 last week?

7 A (Whitney) I was not, no.

8 A (Ladewig) No.

9 Q I think there was some concerns by folks right  
10 on the Bay expressing, well, expressing concern  
11 that maybe they're underestimating the need for  
12 the concrete mattresses or that the concrete  
13 mattresses would be going too much further out  
14 because of the length of the tidal flat. Is  
15 there anything, any concerns there that we  
16 haven't heard from the Construction Panel that  
17 we should be aware of?

18 A (Whitney) Again, I think it's like you're  
19 stating was talked about at the hearings last  
20 week. It sounds like they're saying we're not,  
21 we won't truly know until we get there in terms  
22 of what the length of the mattresses are going  
23 to be which I think is fair. I think you can  
24 always make estimates as to what you think

1           they're going to be, and hopefully those  
2           estimates are conservative, right? That's the  
3           way that we would do it, and I'm sure that's the  
4           way the Applicant's consultants would do it is  
5           try to be conservative. It's easier, always  
6           easier to somewhat overestimate than to  
7           understatement when things actually happen.

8           Q     Can I ask you a question on that?

9           A     (Whitney) Sure. Yes.

10          Q     Why is it such an unknown? I mean, you know the  
11          length of the, you know the depth, you know, you  
12          should have a pretty good idea of the depth of  
13          the soil, the type of soil, what unknowns might  
14          lead to the fact that you're going to be needing  
15          a concrete mattress that might be longer than  
16          what you anticipated?

17          A     (Whitney) So your understanding is based off of  
18          a few things. You do marine surveys, right? So  
19          you're doing, again, these are remote sensing  
20          that kind of cover the bottom. So you're  
21          interpreting that data and then you're ground  
22          truthing that with borings or jet probes to look  
23          at how deep rock may be or even maybe even drill  
24          borings. But those are only as good as the

1 point. And they're four inches in diameter is a  
2 boring or a core, right? So that's your sample.  
3 And then you may go another thousand feet. And  
4 there could be a dome of rock that you don't  
5 know about in between those two holes. We had  
6 that happen on Cross Sound Cable. I had that  
7 happen on a land construction job with the same  
8 thing. There was a boring for a septic system.  
9 There was a boring here, a boring on the other  
10 side of it, which is what you would do. You  
11 don't normally put the borings in the middle of  
12 it. And there was a dome of rock right in the  
13 middle of it, and it was just that narrow.  
14 And that same thing happened on the Cross Sound  
15 Cable in New Haven Harbor where we had a core,  
16 we went maybe a thousand feet, 1500 feet south,  
17 and it was another core. Unbeknownst to us  
18 there was a dome of rock between it, and the  
19 burial came up shallow because of that. We  
20 didn't wind up using the mattresses there. Just  
21 wound up being a shallower burial there, but it  
22 had to be explained to the State of Connecticut,  
23 the Army Corps, and we went back out and did  
24 more borings to really map where that rock was

1 to see if there were other alternatives for  
2 burial.

3 So while you'd like to have all that  
4 information, the only true way to do it is to do  
5 what's called a proving run where you run the  
6 whole thing first and you get an idea without  
7 the cable installed or you do it with the cable  
8 and you hope for the best.

9 MR. FITZGERALD: If I could, relative to  
10 the mattresses, are the tidal flats and the  
11 potential that they would be exposed, either  
12 exposed or that they would be just under the  
13 surface of the water and may proven somewhat  
14 hazardous to boats navigating the area, in your  
15 experience in the deep channel, is there, are  
16 there any significant issues associated with the  
17 use of the mattresses if you do run into a  
18 situation like you just mentioned? Either  
19 environmental or from other considerations?

20 A (Whitney) In deeper water, the concern would  
21 more be, and you run into this in the ocean a  
22 lot, is fishermen and dragging their nets and  
23 the nets getting hung up on a mattress, and it's  
24 something the fisherman have been quite

1 concerned about in some of the offshore wind  
2 projects.

3 To my understanding there's not a lot of  
4 drag fishing or maybe there's none in the Little  
5 Bay. I'm not sure what the amount of activity  
6 is there, but that would be the concern I would  
7 have. But, again it goes to, you know,  
8 somebody, this area is a charted cable here. If  
9 you look at the NOAA charts, it says cable area  
10 on it.

11 MR. FITZGERALD: That's what I was just  
12 going to ask you.

13 A (Whitney) Right. So when the cable gets  
14 installed, the as-builts will get sent to NOAA,  
15 the National Oceanic and Atmospheric  
16 Administration. They're the ones that are  
17 responsible for creating our nation's charts.  
18 The location of this cable will be put on to  
19 that chart. Whether it's, whether they decide  
20 to maintain the cable area designation or what  
21 they're doing now is they're using more of a  
22 squiggly line to denote locations of cables.

23 So that will be shown on a chart, and in  
24 doing work with navigation you always have to

1 use the caveat I'm about to, "the prudent  
2 mariner" won't anchor in that location. Things  
3 happen, but -- so that's the way that location  
4 is denoted.

5 Sometimes, too, the Army Corps may require  
6 that cable crossing signs be put up at each  
7 landfall. If you've been on boats you've  
8 probably seen them. They're the big orange  
9 signs with the black text on them that says, you  
10 know, cable crossing, do not anchor in here.  
11 And that's up to whether the Corps will require  
12 that or not. Ultimately, it's up to them to  
13 require that. I've seen instances where they  
14 haven't, but many instances they do.

15 MR. FITZGERALD: Thank you.

16 DIR. MUZZEY: I have a followup question to  
17 that. In the test run, that will provide some  
18 certainty as to whether there are problems with  
19 depth. We'll find those anomalies or the large  
20 unexpected places where the depth may not be  
21 able to be reached. The desired depth. Is that  
22 true?

23 A (Whitney) In that thousand foot stretch. Yes.

24 DIR. MUZZEY: So that will at least be

1 known for that.

2 A (Whitney) Correct.

3 DIR. MUZZEY: For the rest of the run, is  
4 there a recommended number of borings to do  
5 those tests that sort of is used in the  
6 industry?

7 A (Whitney) There really isn't. There really is  
8 no standard. You look at the length of the  
9 crossing. You look at how geologically complex  
10 the area is, and then you make a judgment. The  
11 way we do it, when we do these, we're doing them  
12 for two purposes. We always try to be  
13 proactive, and we're doing it to support the  
14 permitting because there's obviously a very  
15 important part, but we also try to work with the  
16 installers if they're known at that point or  
17 we'll talk to installers and say about how many  
18 fiber cores would you want here. So we do that.

19 And then oftentimes they may go back later  
20 on and take subsequent cores to get a little bit  
21 more definition on what the bottom is like.  
22 Because the installers will do their own  
23 surveys, too, just before installation. They'll  
24 do their own bathymetric surveys to make sure

1           they understand what the bottom condition is.  
2           Because it changes over time. This proceeding  
3           has been going on for two years, right?

4           DIR. MUZZEY: I think more.

5       A     (Whitney) Right? Maybe more. So the bottom  
6           does tend to change over time and even without  
7           extreme events like a hurricane or very strong  
8           nor'easter. So that's why they always go back  
9           and do a preinstallation survey, the installers  
10          do, as part of their work.

11          DIR. MUZZEY: Did you review the amount of  
12          geophysical data that's known on the jet plow  
13          area and the number of borings that will be done  
14          and for this Project? Did you have any  
15          concerns? Well, first, did you review it, and  
16          second, did you have any concerns with it?

17       A     (Whitney) We reviewed it, yes, and I think early  
18           on in 2016 I think we had expressed some  
19           concerns about the number and the location of  
20           them. I have to go back and see exactly what we  
21           put. But subsequent to that, there have been  
22           additional rounds of sampling that have been  
23           done over time, and I think we also expressed  
24           concerns about some of the constituents that may

1 or may not have been tested for as part of that.  
2 So there has been, it's kind of had that  
3 progression over time from multiple surveys.

4 DIR. MUZZEY: Thank you. That's all I  
5 have.

6 **QUESTIONS CONTINUED BY DIR. WAY:**

7 Q One other question on mattresses. In your  
8 prefiled, you talked about the split pipe  
9 alternative to mattresses and I think we talked  
10 about that, I believe with Attorney Patch. My  
11 understanding from your conversation is you're  
12 kind of taking that off the table because the  
13 Applicant has said it's just not technically  
14 feasible to do that, correct?

15 A (Whitney) That's correct. The Applicant's  
16 Construction Panel testified about ampacity,  
17 cable ampacity being a limiting factor to using  
18 split pipes, and that wasn't possible for those  
19 reasons. And not being an electrical engineer,  
20 if that's what they're saying I, one, assume  
21 that they've used their electrical engineers so  
22 I'm not going to question it.

23 DIR. WAY: Is there anything else in your  
24 experience that could be done to minimize the

1 mattresses?

2 A (Whitney) Achieving burial would be good. Get  
3 the cables as deep as you want. And I think  
4 honestly, most installers and Project owners do  
5 want their cables to be as deep as possible  
6 beyond the environmental concerns. The other  
7 concern is protection of the asset and the  
8 insurability of the asset. The insurance  
9 companies will start asking questions about what  
10 are you doing to protect your cable. How deep  
11 did you bury it. Are there other means that  
12 you're using to protect your cable asset. So  
13 those things go into it as well.

14 DIR. WAY: There was discussion earlier in  
15 these proceedings about having some temporary  
16 signage for boaters, and in your experience, and  
17 I know this is more of an Army Corps decision,  
18 but in your experience does it make sense to  
19 have something a little bit more permanent or is  
20 temporary, will that, do you think that might  
21 suffice?

22 A (Whitney) To me, and I am a boater as well, I've  
23 owned a boat for 16 years, and I've spent a lot  
24 of time working on survey boats and that type of

1 stuff. When you're out there, it's always  
2 helpful to have that sign to know, yeah, okay,  
3 it's just a remainder that -- especially  
4 somewhere where you may not expect it. If it's  
5 a very developed area or like a bridge crossing,  
6 you tend to expect cables, but that's where you  
7 see the signs a lot, too, but it is always good  
8 to know like there's no cable here. So you  
9 don't anchor inadvertently or even in an  
10 emergency where commercial operators sometimes,  
11 if it's a very dire emergency, they may have to  
12 drop anchor to slow the vessel down, and if they  
13 see that they're in between those two signs, and  
14 if they deem that it's safe or if I wait ten  
15 seconds and get past this thing and then drop, I  
16 don't have to worry about hitting that cable.  
17 That's one less thing I've got to worry about.  
18 So I think permanent signs, they are helpful  
19 because not everybody looks at charts. Not  
20 every mariner is prudent. Most of them can  
21 read.

22 DIR. WAY: All right. Very good. In terms  
23 of HDD, have you attended many public hearings  
24 by chance?

1 A (Whitney) Pertaining to HDD?

2 Q Yes.

3 A (Whitney) Not a lot.

4 Q Because we had a public hearing, and of course  
5 the discussion was very much HDD as an  
6 alternative to jet plow, and I think that's  
7 because the issue is on the table, but I'm just  
8 wondering what the public response would be for  
9 a project where HDD was initially proposed and  
10 what do you tend to hear from the public as  
11 concerns?

12 A (Whitney) Noise.

13 Q Noise?

14 A (Whitney) Noise. Lights. Will this happen 24  
15 hours a day. Even at not public hearings or  
16 like something more informal like a project open  
17 house or even just having discussions with  
18 adjacent landowners as part of you're doing site  
19 visits, those tend to be the things that the  
20 layman tends to gravitate towards that live in  
21 those areas, like what's the effect going to be  
22 on me if you're here drilling.

23 Q And then I'll end with the ultimate unfair  
24 question. If this was put into your lap, no

1 discussion of HDD or jet plowing, with what you  
2 know today what might you consider as your first  
3 choice?

4 A (Whitney) The first choice, I think just knowing  
5 what I know about this area I think would be the  
6 what I would call the quote, unquote, "beach  
7 landing" rather than the HDD, just knowing how  
8 tight the area is on both sides. Where the  
9 directional drill is. I think that might be the  
10 first choice, but I would certainly look at all  
11 the options and engage engineers, too. That's a  
12 key part of this. I am an engineer, and I do a  
13 lot of permitting, but there are HDD engineers  
14 that are a lot smarter than I am. So you always  
15 try to learn from their experience and what do  
16 you think. Here's the environmental constraints  
17 and why we should go A or B, what are the  
18 engineering constraints as to why we should go A  
19 or B, and then you try to pull all that together  
20 and make your decision.

21 Q Do you have any thoughts yourself as well?

22 A (Ladewig) I don't have anything to add to that,  
23 no.

24 Q Gentlemen, thank you.

1 MR. FITZGERALD: When you say beach  
2 landing, could you specifically explain?

3 A (Whitney) It's a term of art. It's not  
4 necessarily that there's a beautiful beach  
5 there. It's just when they bring the plow as  
6 close as they can to shore or either drag it up  
7 the shore or they bring it as close to shore and  
8 then they use divers to get the rest of the way,  
9 and there's a shore landing excavation. Just  
10 kind of a term.

11 MR. FITZGERALD: Is that different than  
12 what's been proposed here?

13 A (Whitney) No. No. That's essentially what  
14 they're doing is a beach landing. Yes.

15 MR. FITZGERALD: Thank you.

16 PRESIDING OFFICER WEATHERSBY: Ms. Duprey?

17 MS. DUPREY: Thank you, Madam Chair.

18 **QUESTIONS BY MS. DUPREY:**

19 Q Good afternoon.

20 A Good afternoon.

21 Q I want to follow up on that line of questioning  
22 and be sure that I really understand the impacts  
23 of the two methodologies. And so my first  
24 question is we were told that using HDD, three

1 things that jump out at me. One was that this  
2 was a very long run to do HDD on and that it's  
3 not common to do it on this length; is that your  
4 understanding as well?

5 A (Whitney) That is my understanding is that the  
6 length is kind of on the edge. Yes.

7 Q Okay. And when you say "on the edge," on the  
8 edge of what?

9 A (Whitney) It's not so much, and we put this in  
10 our testimony in our report as well, it's not so  
11 much the ability or nonability to drill that  
12 far. It's more, it's how far you can pull the  
13 cable without it being pulled apart. If you  
14 think about how much this cable weighs per foot  
15 and then you start adding the number of feet in  
16 the crossing, that's a pretty heavy load and you  
17 have to tug on it pretty hard to get it through  
18 that pipe. So that, in my experience, has been  
19 the thing that's driven the length of HDD uses  
20 either for a full crossing or for a landfall  
21 approach.

22 Q One of the other things that we read in Prefiled  
23 Direct Testimony was that using HDD generally is  
24 a much longer project. Why is that? That, for

1 instance, here I believe the jet plow run could  
2 be a couple of months, three to six months,  
3 whereas HDD could take as long as maybe even  
4 three years.

5 A (Whitney) So it's the nature of the drilling  
6 process. Think about, and we explain this a  
7 little bit in our testimony, but if you think  
8 about the process, you have to get there, you  
9 have to set up the operations area on land on  
10 either side.

11 Q Right.

12 A (Whitney) So let's assume we're doing a full  
13 crossing of Little Bay.

14 Q Correct.

15 A (Whitney) So you have to set up the entry and  
16 the exit on each side. Then you have to set up  
17 the drill, get the drill rig there. Get that  
18 set up and then you start drilling. And you  
19 have to drill a pilot hole just like if you're  
20 drilling something in your home and then --

21 Q Does a pilot hole go all the way across?

22 A (Whitney) It would. Yes.

23 Q It does.

24 A (Whitney) So it goes, it would go all the way

1 across or if it were just a landfall, it would  
2 go out to wherever the exit point is. In that  
3 case you'd have a cofferdam or an excavation  
4 you'd have to go in advance. So there's time  
5 with that associated as well.

6 And then for either method, a full Bay  
7 crossing or just at the landfall, once the pilot  
8 hole is drilled, then if you picture the drill  
9 coming out the exit, they attach what's called a  
10 reamer onto the drill string that's been  
11 advanced, and then they pull it back and they  
12 start boring the hole wider, and that takes,  
13 sometimes it can take multiple passes to do that  
14 going back and forth. And then you have to pull  
15 the conduit through it, and then the HDD team  
16 can go away. So you have the conduit at that  
17 point, a pulling wire of some sort is through  
18 it, and then you have to come back at another  
19 period of time to actually physically pull the  
20 cable through it.

21 So it's a much more, there are a lot more  
22 steps, and those steps are a lot longer than the  
23 cable ship shows up and the hole is excavated on  
24 one end and the divers are in place and then you

1 jet plow across and you're done with one. And  
2 then you go load the next cable and do the same  
3 thing two other times in this case.

4 Q So you'd have to do it three times?

5 A (Whitney) That's what the the Applicant, I  
6 believe, was proposing was three separate  
7 trenches, yes. So it could be three runs. Yes.

8 Q Okay. And then we heard about noise which  
9 apparently can be quite loud. So how long would  
10 that go on for?

11 A (Whitney) As long as they have to drill or pull  
12 back, that machinery would be running. During,  
13 any type they're working, the machinery would be  
14 running.

15 Q So it's noise from machinery?

16 A (Whitney) Yes. Yes.

17 Q Okay. And does this run 24 hours a day? I  
18 believe we read somewhere that some of it  
19 actually would run 24 hours a day.

20 A (Whitney) Yes. Some of the HDD processes do run  
21 24 hours a day. That's correct.

22 Q So as I'm like processing all of this, unless  
23 there's a huge environmental advantage, it seems  
24 that using HDD on the end and jet plow in the

1 middle is like the worst of all worlds in the  
2 sense of you've got all the jet plow equipment  
3 in the water, then you've got these huge  
4 installations on either side, you've got the  
5 noise, the time gets exponentially increased.  
6 Why would anybody do this?

7 A (Whitney) Sometimes environmental requirements  
8 weigh out or sometimes the physical  
9 characteristics weigh out like you've got  
10 projects where there's a historic bulkhead and  
11 you can't go through it. It's on the National  
12 Register of Historic Places. You have to go  
13 under it. And so the only way to go under it is  
14 the directional drill.

15 Q Okay.

16 A (Whitney) That's where that tradeoff ended up.

17 Q Okay. I want to understand better the  
18 consequences of nitrogen loading, and I really  
19 want to understand what nitrogen loading is.  
20 Could you explain to me what it is?

21 A (Whitney) We'll let Matt explain that.

22 A (Ladewig) Is there a particular part you'd like  
23 to focus on because it's a pretty broad topic.

24 Q Okay. So the Town of Durham and Newington have

1 both registered concern over the amount of  
2 nitrogen loading that's going to be the result  
3 of the jet plowing, and then they talk about the  
4 fact that they've been working hard and spending  
5 a lot of money to reduce nitrogen loading into  
6 the Bay, and I believe that's something I read  
7 in testimony for the experts who are coming in  
8 tomorrow said that the jet plow process could  
9 double the amount of loading that they would do  
10 in one year, the towns would contribute in one  
11 year. I believe the numbers were the jet plow  
12 process will perhaps nitrogen load four tons of  
13 nitrogen where the towns are contributing  
14 somewhere between a half ton and two tons a  
15 year.

16 So since the process itself is contributing  
17 something new, I'm presuming this has to do with  
18 the running through the sediment of the jet plow  
19 and kicking up the sediments into the water, and  
20 I just want to understand what they're referring  
21 to when they raise the concern.

22 To me, I look at it like this is already  
23 there. So I don't understand the importance of  
24 it getting reintroduced to the water and so

1           that's what I'm wondering if you could help me  
2           out with.

3           A     (Ladewig) Right. I think the concern is that  
4           while nitrogen may already be there in the  
5           sediments, in some cases it's not really  
6           accessible to organisms living in the water or  
7           on the surface because it's buried so deeply or  
8           it's in forms that are not, they're not able to  
9           access. And so the action of disturbing the  
10          sediments could result in some nitrogen being  
11          released into the water column. It would be  
12          different forms of nitrogen, and that's another  
13          one of the sort of tricky parts about this is  
14          there's some forms of nitrogen that might be  
15          less likely to be used by biology than others  
16          whereas others would be very readily used. I  
17          think the word eutrophication was brought up  
18          earlier. Basically just refers to nutrient  
19          enrichment. So I think what they're trying to  
20          get at is is the release of this nitrogen from  
21          the sediments going to be an issue or not.

22          Q     And is it?

23          A     (Ladewig) I can't really make a determination on  
24          that based on what I've seen. What I've

1 reviewed has been limited to a few statements  
2 and the modeling spreadsheet, and it seems to me  
3 that there's a large amount of uncertainty as to  
4 whether, as to both the total amount of nitrogen  
5 that would be released as well as what the  
6 consequences of that would be and how available  
7 it actually would be. So I can't make a  
8 determination of that based on what I've seen so  
9 far.

10 Q Will the sediment modeling help with that or is  
11 it not geared towards that?

12 A (Ladewig) When you refer to the sediment  
13 modeling, you're talking about the dispersion  
14 models?

15 Q Yes. I'm sorry.

16 A (Ladewig) They could help a little bit in terms  
17 of where the nitrogen that's associated with the  
18 particulates might go. I don't know if it's  
19 going to be as useful as actually looking at  
20 what happens afterwards.

21 Q Am I correct in understanding from what you're  
22 saying that the jet plow dispersion of nitrogen  
23 isn't necessarily comparable to nitrogen that's  
24 dumped from a wastewater treatment plant into the

1 Bay?

2 A (Ladewig) Yeah. Not knowing exactly what's out  
3 there in the Bay currently, I couldn't say  
4 exactly how different it would be, but I would  
5 expect the forms and the ratios of nitrogen to  
6 be different in the sediments than they are in  
7 the releases coming from the wastewater  
8 treatment plant or from the watershed in  
9 general.

10 Q And is one worse than the other typically? Or  
11 are they just different forms of bad? Or what?

12 A (Ladewig) Well, nitrogen also can be converted  
13 by biology from one form to another. So  
14 something that may not be a problem today could  
15 be a problem tomorrow under the right  
16 circumstances. It's a very complex process.  
17 Sort of difficult to know exactly how this  
18 nitrogen would interact in the short and  
19 long-term with biology in Little Bay.

20 I think what's more important is looking at  
21 the relative magnitudes which I believe this  
22 modeling exercise tried to do. The issue that I  
23 have is it seems like there's enough uncertainty  
24 there that the actual impact could be different

1 from what is being presented in terms of orders  
2 of magnitude of nitrogen loading.

3 PRESIDING OFFICER WEATHERSBY: Could I  
4 follow up? Do you think then there should be  
5 more sampling of the nitrogen in the sediment?  
6 What would give more certainty to the process?

7 A (Ladewig) Well, think, there is some nitrogen  
8 data available. I'm not sure if a more  
9 sophisticated model would be able to handle this  
10 better. I'm not a nitrogen modeler for  
11 estuarine environments myself, but that could be  
12 one thing that could be done to better  
13 understand what might happen, and I haven't  
14 looked through all the data that has been  
15 collected so I don't know how detailed it is.  
16 So it's hard to answer that question entirely.

17 MR. FITZGERALD: Could I follow up?

18 PRESIDING OFFICER WEATHERSBY: Yes.

19 MR. FITZGERALD: It seems to me that we're,  
20 we may possibly be comparing apples and oranges  
21 here, and this is a Project that will last  
22 potentially two or three months. They'll be  
23 some crossings and so on and then it will be  
24 over as opposed to comparing it to nitrogen,

1 say, being released from wastewater treatment  
2 plant or incoming from the watershed, fertilizer  
3 use, et cetera. Given that, I don't intend to  
4 minimize the potential of release, but is  
5 comparing those types of sources helpful that,  
6 you know, one release which is an ongoing and  
7 continuous wastewater treatment, I know there's  
8 significant programs to reduce nitrogen  
9 fertilizer in the watershed, but are we  
10 comparing things that are comparable here in  
11 terms of not just the type of nitrogen but the  
12 potential total amount and the impact over a  
13 given period of time?

14 A (Ladewig) So, yeah, I understand what you're  
15 saying.

16 Q Good. Because I'm not sure I do.

17 A (Ladewig) In that the installation really is a  
18 one-time temporary impact, and I think most of  
19 us would agree that there will be some release  
20 of nitrogen from sediments into the surface  
21 water. I don't think there's much argument  
22 about that. Obviously, it's easier to predict  
23 what's coming out from wastewater treatment  
24 plants because it's very well known and can be

1 controlled to a certain degree. As well as from  
2 the watershed. Those sources will be ongoing.  
3 Atmospheric sources will be ongoing because  
4 nitrogen actually enters the water from the  
5 atmosphere. So there's lots of other different  
6 inputs that can be used to put this in  
7 perspective that are long-term inputs that don't  
8 nicely go away. Correct.

9 MR. FITZGERALD: Thank you.

10 **QUESTIONS BY MS. DUPREY:**

11 Q I also presume that in other places where jet  
12 plowing occurs that there's the same issue with  
13 it kicking nitrogen up into the water, correct?  
14 I mean, this estuary isn't unique, is it, in  
15 terms of nitrogen that's in there?

16 A (Ladewig) I'm not aware of it being unique in  
17 terms of the amount of nitrogen that's in the  
18 sediment, but you're correct. Whenever you  
19 disturb the sediments, you're going to release  
20 nutrients that are currently in the sediment to  
21 some degree. Just as a matter of the physical  
22 disturbance itself.

23 Q But that hasn't been enough to cause jet plowing  
24 as a process to be, to not be utilized. It's a

1 common process, correct?

2 A (Ladewig) Correct. I mean, you can think about  
3 it in other ways, too. Every time an anchor  
4 drags across the bottom of a sea floor, there's  
5 some sort of disturbance there, you're releasing  
6 something into the water column, albeit on a  
7 smaller scale probably.

8 Q All right. That's all I have, Madam Chair. I  
9 think there's a question down here following up.  
10 Thank you.

11 PRESIDING OFFICER WEATHERSBY: Director  
12 Muzzey?

13 DIR. MUZZEY: In your experience with other  
14 jet plow projects where nitrogen might have been  
15 a concern or the release of nitrogen, are you  
16 familiar with any type of mitigation or  
17 remediation being part of that project or any  
18 type of permitting that went along with it?

19 A (Ladewig) I'm not aware of nitrogen having been  
20 a significant concern with prior jet plow  
21 projects.

22 A (Whitney) I was trying to think of one that  
23 nitrogen has been a concern raised, and I can't  
24 think of one, nitrogen was raised to this level,

1 the questioning.

2 DIR. MUZZEY: Thank you.

3 PRESIDING OFFICER WEATHERSBY: Mr. Schmidt?  
4 Ms. Duprey.

5 MS. DUPREY: I'm sorry. So I don't want to  
6 put words in your mouth, but I want to  
7 understand what you've just said there. I think  
8 what you said was that you're seeing more  
9 sensitivity not necessarily by regulators but  
10 more sensitivity by the public about the  
11 nitrogen here. Is that correct?

12 A (Whitney) I was referring to in general in the  
13 proceeding. I can't think of a proceeding where  
14 nitrogen came up and was discussed to the level  
15 it has been here. Off the top of my head.

16 MS. DUPREY: All right. Thank you.

17 **QUESTIONS BY MR. SCHMIDT:**

18 Q Good afternoon. Changing subjects a little bit.

19 Earlier in your testimony you made a  
20 reference of the wind. 15 mile per hour pretty  
21 low, and 20 is more standard. Can you tell me  
22 what difference in the sediment dispersion that  
23 might create or is it a significant change if  
24 that allowable wind speed was higher?

1       A       (Whitney) So I think 20 miles an hour wasn't  
2       necessarily a standard. It was just intuitive.  
3       And if I remember DES's condition correctly and  
4       I'd have to go back and look, but my  
5       recollection is the condition was about whether  
6       or not to start jetting. That was kind of the  
7       threshold; if it's less than 15 miles an hour,  
8       then you're okay. If it's greater than, you  
9       can't. And I think they were trying to  
10      potentially get to that sediment dispersion.

11             From my recollection of the discussion in  
12      the model about wind forcing on currents, it was  
13      not a large component, if I remember the  
14      modeling correctly. It's been a while since I  
15      looked at the level of detail in it so wind  
16      generates waves. Tends to stir up the water.  
17      The deeper you go, those waves do not feel  
18      bottom as we would say because it is, you know,  
19      waves are an orbital motion of water, and the  
20      deeper you go becomes circular and eventually it  
21      stops over a certain depth.

22             So I think it was more about the starting  
23      and the stopping is what our comments were  
24      about. The 15 miles an hour didn't seem, it

1           seemed like a fairly, you know, in the grand  
2           scheme of things, in terms of the vessels that  
3           are involved here, a fairly gentle breeze  
4           compared to a 20 mile an hour or 20 knot breeze  
5           which is getting to be a little more  
6           significant.

7           Q     So there's no foundation really for a lower, you  
8           know, what are the advantages of a lower versus  
9           a higher wind speed to begin with? I'm not  
10          following you.

11          A     (Whitney) I'm trying to think how to answer the  
12          question. Certainly a lower wind speed you're  
13          going to have lower wave conditions, right? So  
14          it makes the installation from the surface  
15          easier. Right? You don't have the vessel  
16          bobbing up and down as much. Just kind of  
17          moving along. Almost like a mill pond, right?  
18          So I think that's the concern.

19                 I think where DES may have been going in  
20          terms of what you were asking about in your  
21          first question is if you have a higher wind  
22          speed, are you going to have more potential for  
23          stirring up the sediments. We all know that  
24          when we get a storm that comes through and even

1 on a good day where you get a really big front  
2 that comes through and you get these sustained  
3 winds over hours and hours and hours, we all see  
4 the waters go from blue to brown because it  
5 naturally gets stirred up. So I think that may  
6 have been the analogy, but again, I'm  
7 speculating, but I think that's where DES was  
8 going with it.

9 Q All right. Thank you. Regarding the, in your  
10 Prefiled Testimony the use of ledge, plastic  
11 ledge for cover in lieu of mattresses, and I  
12 think there was some feedback from the utility  
13 where that -- and bear with me, I'm not sure  
14 exactly what the followup testimony from  
15 Eversource was. But are there any advantages to  
16 having, besides the aesthetic, having the  
17 mattresses over, say, a ledge or riprap type  
18 setup?

19 A (Whitney) I think in terms of mattresses versus  
20 rock? You know, dumping rock? When you're  
21 placing mattresses it's a little more of a  
22 precise operation. If you think about it, it's  
23 a rectangle and it's attached to a crane and you  
24 can guide it to where you want. Where you're

1 dumping rock, you're dumping rock and placing it  
2 on the bottom, and it's not like you're doing it  
3 on the side of 93 where you can see where you're  
4 placing those rocks. You're doing it  
5 potentially underwater. So it's up to the crane  
6 operator, and they're pretty good at it of  
7 getting the rocks next to each other. So I  
8 thing that's one of the differences in terms of  
9 dump riprap. Dump riprap does get used.

10 Q What I was specifically thinking was on the  
11 shore approach when the aesthetic concern is  
12 there, riprap by definition is more of a placed  
13 stone.

14 A (Whitney) Yes.

15 Q Chinked in.

16 A (Whitney) Yes.

17 Q And I didn't know if that, if there was, besides  
18 more labor intensive if there was an advantage  
19 or disadvantage.

20 A (Whitney) I think an advantage is in this  
21 shoreline placement of stones blends with the  
22 shoreline a little better if there are natural  
23 stones that are along that shoreline from the  
24 pictures that we've seen and so I think that's

1 one advantage.

2 One potential disadvantage and, again, this  
3 would have to go back to the engineers to  
4 verify, but when you have a mattress and it's an  
5 articulated mattress, it's all connected, it is  
6 going to settle differentially but everything is  
7 connected. And with stones as they start  
8 settling, stones are not round and you start  
9 getting, as they start working their way into  
10 the mud, if you get a pointed edge, does that  
11 damage the cable. There's a potential there.  
12 How much of a potential I couldn't really  
13 quantify. But those are the types of things I  
14 would think about if I was weighing the two, and  
15 if I were an engineer responsible for that,  
16 that's what I would think about.

17 Q All right. Thank you. Lastly, the other  
18 evening, I believe it was last week we had a  
19 public meeting, and an individual testified  
20 regarding biological contaminants being so near  
21 the air base. So manmade biological, potential  
22 of being in the Bay, do you have any experience  
23 with anything like that or I'm trying to get a  
24 little, one person that testified, I'm trying to

1 get a better sense of it. The industrial  
2 contaminants that would come off the, I'm not  
3 sure what, the bottoms.

4 A (Whitney) I don't really have experience. I  
5 think when you talk about this person testified  
6 about biological contaminants?

7 Q Yeah, and his specialty was exposures from  
8 Vietnam to the Gulf Wars and with some of the  
9 folks got exposed to them over there.

10 A (Whitney) Yes.

11 Q Not necessarily native to that land but native  
12 to the equipment.

13 A (Whitney) So something from like a weapons type  
14 system.

15 Q Correct.

16 A (Whitney) I don't have any experience in that.

17 Q Do you have any?

18 A (Ladewig) Same here. No.

19 Q All right. Thank you. That's all I have.

20 **QUESTIONS BY PRESIDING OFFICER WEATHERSBY:**

21 Q Following up on that just a little bit, there  
22 has been some criticism of the Applicant for its  
23 testing of certain contaminants like lead and  
24 the PCBs and other, not the materials from the

1 air base necessarily, but I know they did some  
2 testing, and then they went back and did more  
3 limited testing and they tested 12 samples in  
4 the beginning, and then couple years later went  
5 back and tested half again. But I guess my  
6 bigger point is do you feel as though the  
7 Applicant's testing for contaminants has been  
8 sufficient?

9 A (Whitney) I think where we are now I think it is  
10 sufficient. Ultimately, I think DES has a role  
11 to play in that as well. They know the local  
12 waters probably better than any of us. But if I  
13 think back to where we started and where we are  
14 today, it's vastly improved because they've gone  
15 back and done that additional testing over time.

16 Q And will that type of substance also be tested  
17 for during the jet plow trial? Contaminants?

18 A (Whitney) I believe in their monitoring plan and  
19 I'll go back and look. I believe they talked  
20 about in their monitoring plan that they were  
21 going to be testing for beyond just total  
22 suspended solids. They would be testing for  
23 chemical constituents in the water as part of  
24 their water sampling. Subject to check, I

1 believe that is what the monitoring plan says.  
2 If you give me a moment, I might be able to find  
3 it here.

4 So on their, the Applicant's, it's in their  
5 Water Quality Certification Application, page 8,  
6 it says water samples will be collected at each  
7 depth from the mobile and sentry stations for  
8 analysis of TSS, total nitrogen, dissolved and  
9 particulate copper and arsenic and fecal  
10 coliform bacteria. So it looks like they are  
11 testing for copper. At least copper and arsenic  
12 as part of that monitoring.

13 A (Ladewig) That's from the document dated  
14 December 15, 2017.

15 Q But not leads and PCBs and things are not part  
16 of that testing?

17 A (Whitney) They are not according to what's in  
18 there. Yes. That's correct.

19 Q Another criticism, I just want your critique,  
20 you're telling me whether this is a fair  
21 criticism or not, was that the Applicant didn't  
22 sufficiently analyze the wind effects on the  
23 sediment dispersal. What you were just talking  
24 about. Do you believe that the Applicant has

1 sufficiently analyzed the wind effects on  
2 sediment dispersion?

3 A (Whitney) I believe they have. They went back,  
4 and the original modeling report, sediment  
5 modeling report, didn't really address it and  
6 then that topic was raised, and they went back  
7 and they did the sensitivity analysis and they  
8 also did a little more bit more detail about why  
9 the wind-generated currents are not as  
10 significant a component in the overall tidal  
11 regime. So I think they have. I think they've  
12 done what they can do.

13 Q We were talking earlier about the trial run and  
14 how it's a thousand feet and that certain other  
15 Projects it would be, it wouldn't be contiguous.  
16 It would do maybe a couple hundred feet and skip  
17 an area and then do another couple hundred feet.

18 Would that be a better approach for this  
19 Project or do you think a thousand continuous  
20 feet would be, sort of the dot-to-dot  
21 intermittent approach or a contiguous approach  
22 would give you better results?

23 A (Whitney) I think in this case because part of  
24 what we're trying to accomplish with the jet

1 plow trial is understanding the plume, as it  
2 were, the suspended sediment plume, that a  
3 longer continuous piece would be more  
4 beneficial. Doing smaller pieces at different  
5 intervals kind of expands upon what I was  
6 talking about in some of the earlier questioning  
7 from the Committee about you only know what you  
8 know from the samples that you take at those  
9 locations so that expands that amount of area  
10 that you now know. If you have a 200-foot  
11 segment that's in between two borings, you know  
12 I can get the depth there. And then you do  
13 another one 300 feet away, I can get to depth  
14 there.

15 So but I think the overall goal of this  
16 trial, the jet plow trial, is to look at the  
17 total suspended solids and what is the sediment  
18 plume. So I think the thousand, I think a  
19 longer continuous is better than the short  
20 spurts. The best way to know on the burial  
21 depth thing is if you do a proving run and you  
22 run the plow from end to end without the cable  
23 and jet it, and then you know you're going to  
24 get to that depth or not. But some states won't

1 allow that.

2 Q And then also in your testimony today you stated  
3 that, I just wanted to follow up on it. The  
4 concrete mattresses could have temporary, laying  
5 the concrete mattresses could have temporary  
6 effects on organisms. Did you mean by that just  
7 that when the mattress is put on them that  
8 certain organisms underneath could be killed?  
9 Or did you have something else in mind that it  
10 would be temporary effects on organisms as a  
11 result of the concrete mattresses?

12 A (Whitney) What I had in mind was exactly what  
13 you said. When you place the mattresses on the  
14 bottom, those that are under them will get  
15 killed, but benthic communities are very  
16 resilient and recolonize very quickly so that's  
17 why I characterize it as temporary. We've seen  
18 and as Matt testified earlier that the benthic  
19 communities come back. They are very resilient  
20 and very, even in very tough circumstances the  
21 habitats or the biota that are there are able to  
22 adapt to whatever they're living in.

23 Q It's not temporary to those poor guys  
24 underneath.

1 A No. It isn't unfortunately.

2 Q Temporary to the population as a whole. Okay.

3 I don't think I have anything else.

4 Mr. Shulock, you had a question.

5 **QUESTIONS BY MR. SHULOCK:**

6 Q Just a general question. So earlier this  
7 afternoon, Mr. Needleman went through your  
8 testimony quite thoroughly and demonstrated that  
9 many if not all of your concerns have been  
10 addressed by the subsequent work, and so my  
11 question is are there any concerns that you've  
12 raised that have not yet been addressed?

13 A (Whitney) In the big picture, I would say no. I  
14 think the process has worked. I think the  
15 Counsel for the Public and others had the  
16 opportunity to critique the Applicant's  
17 documents and poke holes in it, as it were, and  
18 find those holes or data gaps, and I think to  
19 the most extent they have been addressed.

20 I think there's some things, like we've  
21 said in our testimony, it's really up for DES or  
22 the SEC to decide if certain things are required  
23 or not. But I think if I step back and look at  
24 a big picture of where we were when we started

1 working on this in 2016 to where we are sitting  
2 here today in October of 2018, we've come a long  
3 way, and we've answered a lot of the questions  
4 that we initially had.

5 Q Thank you.

6 MR. FITZGERALD: Follow up on that?

7 PRESIDING OFFICER WEATHERSBY:

8 Mr. Fitzgerald.

9 MR. FITZGERALD: The one sort of major  
10 issue that I think that you raised was the  
11 requirement, potential requirement for  
12 decommissioning. As I sort of recall from the  
13 testimony, there's been cables here since the  
14 1920s and so the response on decommissioning  
15 seemed to be this project has a  
16 40-or-greater-year life as opposed to other,  
17 say, windmills or other type energy siting, and  
18 that if anything it would potentially be  
19 upgraded at some point, you know, or redone 30  
20 or 40 or 50 years from now in some way.

21 Do you typically see in the projects that  
22 you work on decommissioning plans for these type  
23 of transmission projects that have such an  
24 extended timeline?

1 A (Whitney) For point-to-point submarine  
2 transmission cables like this one, we really  
3 don't, no. It's more in the offshore wind  
4 because they're tied to structures, right? And  
5 nobody wants to see a rusting broken-down wind  
6 turbine sitting out in the ocean for however  
7 long. And like you say, it's something that  
8 could be here for decades to come and none of us  
9 will be working at that point, and they may have  
10 different technology or they can repurpose it.  
11 Who knows. Who knows what the future is going  
12 to bring.

13 MR. FITZGERALD: Can I have one either  
14 nitrogen question if I might?

15 PRESIDING OFFICER WEATHERSBY: Sure.

16 MR. FITZGERALD: Does the time of year of  
17 this Project, the potential fall time frame  
18 have, is release of nitrogen time sensitive? Is  
19 it worse during the summer when the Bay is  
20 warmer and so on? Would any release of nitrogen  
21 from this, and I believe I read in one of the  
22 reports that the annual nitrogen loading for the  
23 Bay was something on the order of 900 and  
24 something tons.

1           So I guess it's a two-part question. One  
2           is does the time of year matter; and two, do you  
3           have any idea of how much nitrogen might be  
4           released from this Project versus the 900 tons'  
5           annual input?

6           A   (Ladewig) Timing does have an impact. I don't  
7           know if I can speak specifically to what,  
8           whether it would be better or worse at a given  
9           time of the year for Little Bay at this point.

10           And also in terms of putting the total  
11           nitrogen loading from the Project into  
12           perspective, I don't know if I can better define  
13           that at this point. I really only reviewed one  
14           short document and a spreadsheet. I think I've  
15           provided the best I can given what we have to  
16           review.

17           MR. FITZGERALD: Thank you very much.

18           PRESIDING OFFICER WEATHERSBY: Any other  
19           questions from the Committee? Attorney  
20           Iacopino?

21           **QUESTIONS BY MR. IACOPINO:**

22           Q   I have just one question. On cross-examination  
23           by Mr. Needleman you were asked about if you had  
24           worked with RPS in the past, and you indicated

1 that you had. Have you worked with the same  
2 team from RPS in the past? This Revised  
3 Sediment Dispersion Report was authored by Craig  
4 Swanson, Deborah Crowley, Daniel Mendelsohn and  
5 Nathan Vinhateiro.

6 A (Whitney) On the past projects Dr. Swanson was  
7 involved. I don't think Dan Mendelsohn was, and  
8 the other names are not familiar. Those are the  
9 two that I know. Mr. Swanson and  
10 Mr. Mendelsohn.

11 MR. IACOPINO: Thank you.

12 PRESIDING OFFICER WEATHERSBY: Attorney  
13 Aslin. Do you have some redirect?

14 MR. ASLIN: Very briefly.

15 **REDIRECT EXAMINATION**

16 **BY MR. ASLIN:**

17 Q Good afternoon. Just want to ask a couple of  
18 quick questions to follow up on some of the  
19 issues that came up earlier.

20 Earlier this afternoon Attorney Patch was  
21 asking you about the Essential Fish Habitat plan  
22 that is proposed and whether it includes an  
23 analysis of electromagnetic fields. So I wanted  
24 to direct you to that condition which is

1 Condition 36 in the DES final approval which is  
2 Applicant's Exhibit 166 which may come up on the  
3 screen here in a minute. Maybe you can already  
4 see it.

5 A (Whitney) Yes, I can see it.

6 Q Okay. So I'll represent that this is the, I  
7 believe, the only condition on Essential Fish  
8 Habitat. Does that square with your  
9 recollection?

10 A (Whitney) Yes. Not being familiar with all the  
11 conditions, that seems like that's likely.

12 Q I guess having looked at the condition now or  
13 having the opportunity to look at it, does that  
14 allow you to answer Mr. Patch's question about  
15 electromagnetic field analyses?

16 A (Whitney) Yes. Just in reviewing this Condition  
17 36, I don't see electromagnetic fields mentioned  
18 in terms of this condition at all.

19 Q Okay. And then there was also, as you recall,  
20 the August 31st response letter from DES which  
21 is Applicant's Exhibit 183, and as I look  
22 through that, I did not see a response relative  
23 to Condition number 36. I'll just scroll down  
24 here where we're at 20 and it goes to 25 and it

1 skips to 41. So do you have any reason to  
2 believe that this letter includes any amendment  
3 to Condition 36?

4 A (Whitney) I don't. My recollection is that the  
5 document did go through the conditions  
6 numerically from start to end.

7 Q Okay. So with regard to electromagnetic fields  
8 and Essential Fish Habitat, do you have anything  
9 else that would be responsive to Mr. Patch at  
10 this point?

11 A (Whitney) I don't at this point, no.

12 Q And then Attorney Needleman asked you about the  
13 testimony in Counsel for the Public Exhibit 3 at  
14 page 2, lines 21 to 26, you testified regarding  
15 spill response, and Attorney Needleman asked if  
16 the DES Condition 48 satisfied your concern.

17 So I'll give you a chance to look at  
18 Condition number 48 which is part of Applicant's  
19 Exhibit 16 6 at the bottom of the page there.

20 A (Whitney) I assume that doesn't continue on to  
21 the next page?

22 Q That's correct. So having had a chance to read  
23 that, does that clarify whether this condition  
24 satisfies the concern you expressed in your

1 Supplemental Testimony?

2 A (Whitney) Yes. I believe it does.

3 Q Okay. Thank you. I have nothing further.

4 PRESIDING OFFICER WEATHERSBY: Okay. We  
5 are done with your examination. Thank you for  
6 your testimony today. We appreciate it. You  
7 may step down. And I don't think we have  
8 anything further today?

9 ADMINISTRATOR MONROE: No. Nothing  
10 further. I checked with a couple of the  
11 witnesses, specifically Mr. Frizzell and  
12 Mr. Baker from Fat Dog, to see if they could  
13 possibly fill in tomorrow and neither of them  
14 can do that. So we'll stick with the schedule  
15 as it was put out which is the UNH/Durham  
16 experts tomorrow starting at 9 a.m.

17 PRESIDING OFFICER WEATHERSBY: Thank you.  
18 We'll see you all tomorrow. We are adjourned  
19 for the day.

20 (Whereupon Day 12 Afternoon Session  
21 adjourned at 4:19 p.m.)

22

23

24

**C E R T I F I C A T E**

1  
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15 employed in this case, nor am I financially  
16 interested in this action.

17 Dated at West Lebanon, New Hampshire, this 27th  
18 day of October, 2018.

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20 \_\_\_\_\_  
Cynthia Foster, LCR  
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